CDP-209ES/790

SERVICE MANUAL

US Model
CDP-209ES
Canadian Model
AEP Model
UK Model
E Model
CDP-790

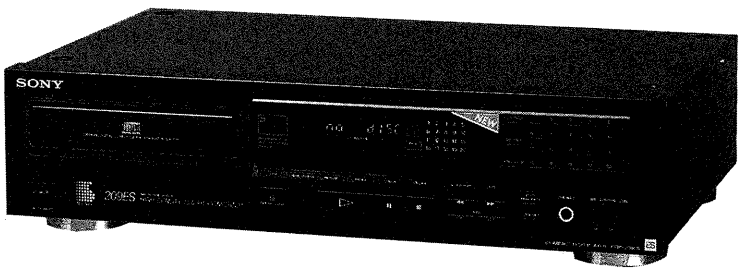

Photo: CDP-209ES

Model Name Using Similar Mechanism	NEW
CD Mechanism Name	CDM14-5BD1
Base Unit Name	BU-5BD1

SPECIFICATIONS

Compact disc player

Frequency response	2Hz – 20 kHz ± 0.3 dB
Signal to noise ratio	More than 110 dB
Dynamic range	More than 97 dB
Harmonic distortion	Less than 0.003%
Channel separation	More than 100 dB

Outputs

LINE OUT (FIXED) (phono jacks)	Output level 2 V (at 50 kilohms) Load impedance over 10 kilohms
LINE OUT (VARIABLE) (phono jacks)	Output level max. 2V (at 50 kilohms) Load impedance over 50 kilohms
DIGITAL OUT (OPTICAL) (optical output connector)	Wave length 660 nm Output level −18 dBm
PHONES (stereo phone jack)	Output level max. 15 mW Load impedance 32 ohms

General

Power requirements	US, Canadian model: 120V AC, 60Hz AEP model: 220V AC, 50/60Hz UK, Australian model: 240V AC, 50/60Hz E model: 110, 120V/220, 240V AC adjustable 50/60Hz
Power consumption	US model: 17W EXCEPT US model: 14W
Dimensions (approx., including projections)	430×110×280 mm (w/h/d) (17×4³/₈×11¹/₈ inches)
Weight (approx.)	4.5 kg (9 lbs 15oz)

Supplied accessories

Audio cord	1 (2 phono plugs – 2 phono plugs)
Remote commander	1
R6 (size AA) batteries	2

Remote commander

Remote control system	Infrared control
Power requirements	3 V DC with two R6 (size AA) batteries
Dimensions	Approx. 67×18×175 mm (w/h/d) (2⁵/₈×²³/₃₂×7 inches)
Weight	Approx. 150 g (5.3 oz) Including batteries

Design and specifications subject to change without notice.

Optional accessory
Optical cable POC-15

使用時は添付資料も参照のこと
Refer to the additional documents.

COMPACT DISC PLAYER

SONY

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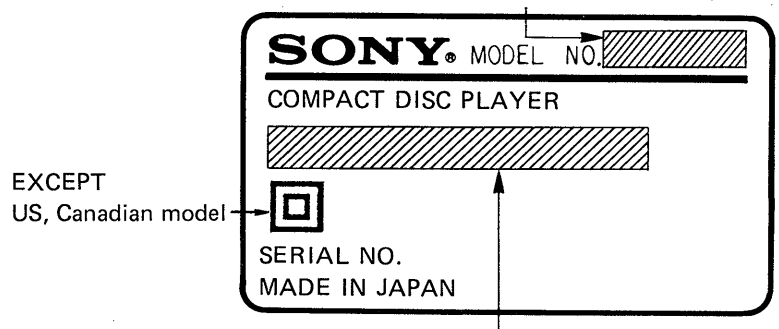
SEE ADDITIONAL INFORMATION

MODEL IDENTIFICATION

– Specification Label –

CDP-209ES (US model)
CDP-790 (EXCEPT US model)



US model:	AC: 120V 60Hz 17W
Canadian model:	AC: 120V 60Hz 14W
AEP model:	AC: 220V ~ 50/60Hz
UK, Australian model:	AC: 240V ~ 50/60Hz
E model:	AC: 110–120, 220–240V ~ 50/60Hz 14W

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

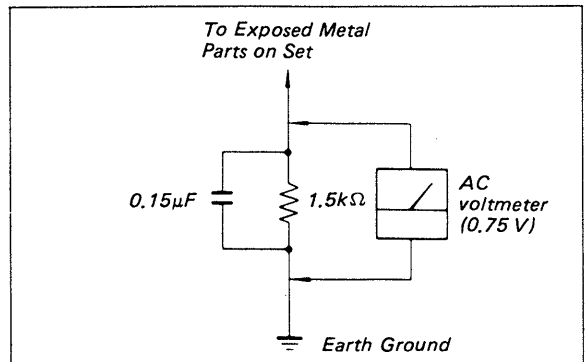


Fig. A. Using an AC voltmeter to check AC leakage.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs a laser. Therefore, be sure to follow carefully the instructions below when servicing.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

1. Laser Diode Properties
   - Material: GaAlAs
   - Wavelength: 780 nm
   - Emission Duration: continuous
   - Laser Output: max. 44.6 μW*

     * This output is the value measured at a distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.

2. During service, do not take the Optical Pick-up Block apart, and do not adjust the APC circuit. If there is a breakdown in the APC circuit (including laser diode), replace the entire Optiocal Pick-up Block (including APC borad).

BESKYTTELSE AF ØJNE MOD LASERSTRÅLING UNDER SERVICE

I dette apparat anvendes laserlys. Derfor skal nedenstående instruktioner nøje følges under service.

Følg iøvrigt instruktionerne i servicemanualen.

ADVARSEL!!

Under service må øjnene ikke komme nær objektiv-linsen på den optiske pick-up enhed. I tilfælde af at det er nødvendigt at kontrollere udsendelsen af laserlys, skal det ske i en afstand af mere end 25 cm fra den optiske pick-up.

1. Laser-didoe data
   - Materiale: GaAlAs
   - Bølgelængde: 780 nm
   - Udstråling: Kontinuerlig
   - Laseroutput: Max. 0,4 mW*

     * Målt i 1,6 mm afstand fra overfladen af objektivlinsen pa den optiske pick-up enhed.

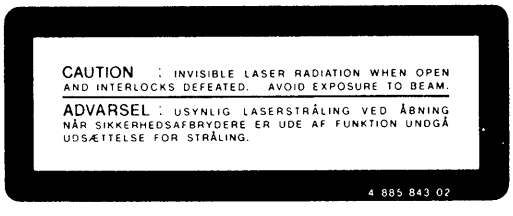
   - Klassifikation: Klasse IIIb.

2. Adskil aldrig den optiske pick-up enhed under service, og juster ikke APC kredsløbet (Automatic Power Control). Hvis APC kredsløbet (incl. laserdioden) bryder ned, skal hele den optiske pick-up enhed (incl. APC printkortet) udskiftes.

LASER ADVARSEL MÆRKNING

Følgende mærkning findes indvendig i apparatet:

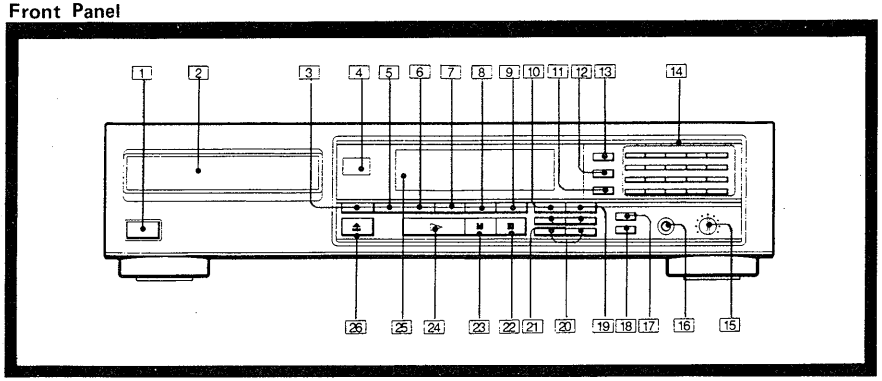
1. Advarsel Mærkning


CAUTION : INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSÆTTELSE FOR STRÅLING.
4 885 843 02

VAROITUS: Laite sisältää, laserdiodin, joka lähettää (näkymätöntä) silmille vaarallista lasersateilyä.

Location of Controls

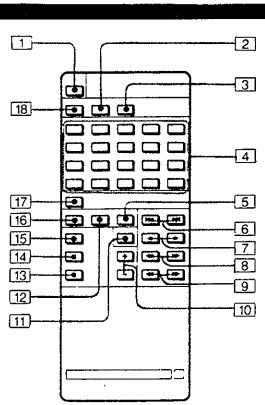
Front Panel



1 POWER switch
2 Disc tray
3 TIME button
4 Remote sensor
5 PEAK SEARCH button
6 REPEAT button
7 FADER (FADE IN/FADE OUT) button
8 CHECK (program check) button
9 CLEAR (program clear) button
10 MULTI PGM (multi-disc program) button
11 PROGRAM button
12 SHUFFLE button
13 CONTINUE button
14 Numeric buttons
15 LINE OUT/PHONE LEVEL control
16 PHONES jack
17 EDIT/TIME FADE button
18 TIME SET button
19 >20 (over 20) button
20 ⏮◀◀ ▶▶⏭ (AMS*) buttons
21 ◀◀ ▶▶ (manual search) buttons
22 ■ (stop) button
23 ❚❚ (pause) button
24 ▶ (play) button
25 Display window
26 ⏏ (open/close) button

* AMS is an abbreviation of Automatic Music Sensor.

Remote Commander

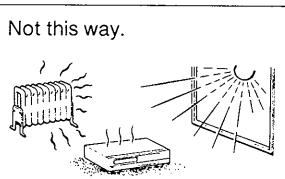


1 ⏏ (open/close) button
2 SHUFFLE button
3 PGM (program) button
4 Numeric buttons
5 AUTO SPACE button
6 ⏮◀◀ ▶▶⏭ AMS buttons
7 ⬅ ➡ INDEX buttons
8 ◀◀ ▶▶ (manual search) buttons
9 ◀◀ ▶▶ SLOW (low speed manual search) buttons
10 LINE OUT volume buttons
11 FADER (FADE IN/FADE OUT) button
12 A ⟷ B repeat button
13 ■ (stop) button
14 ❚❚ (pause) button
15 ▶ (play) button
16 CLEAR/REPEAT (A ⟷ B repeat clear/repeat) button
17 >20 (over 20) button
18 CONTINUE button

Installing the CD Player

Notes the Installation

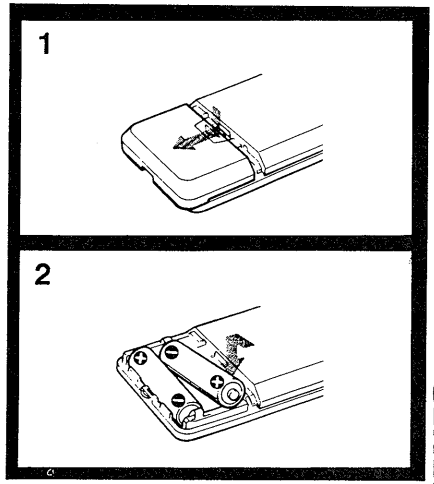
- Place the unit in a location with adequate air circulation to prevent internal heat build up in the unit.
- Do not place the unit on a soft surface, such as a rug that would block the ventilation holes on the bottom.
- Do not install the unit:
  - near heat sources such as radiators or air ducts.
  - in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.



On moisture condensation
If the player is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense on the lens inside the unit. Should this occur, the player will not operate. In this case, remove the disc and leave the player turned on for about an hour until the moisture evaporates.

Preparing the Remote Commander

Installing Batteries



On battery life
- About half a year of normal operation can be expected when using the R6 (size AA) batteries.
- When the batteries are run down, the remote commander will not operate the unit. In this case, replace both batteries with new ones.

Notes on the remote commander and remote control operation
- Keep the commander away from extremely hot or humid places.
- Avoid dropping any foreign objects into the commander casing, particularly when replacing the batteries.
- Avoid exposing the remote sensor to direct sunlight or lighting apparatus. Such exposure can cause a malfunction.
- To avoid damage caused by battery leakage and corrosion, remove the batteries when the commander will not be used for a long time.

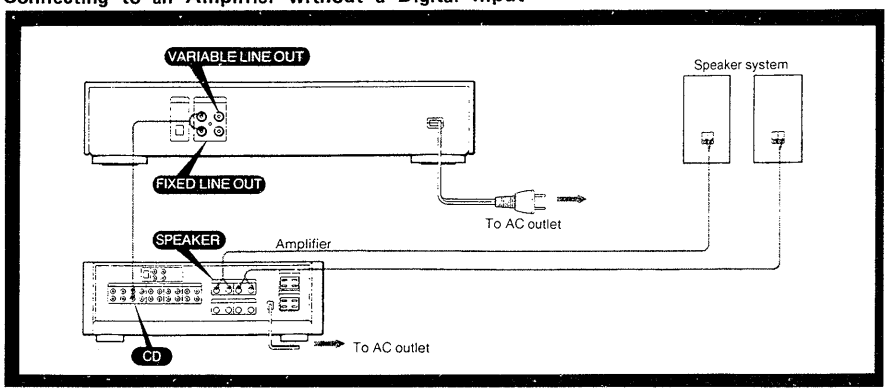
Connecting the CD Player

You can connect the unit with analog or digital signal depending on your amplifier or D/A converter.

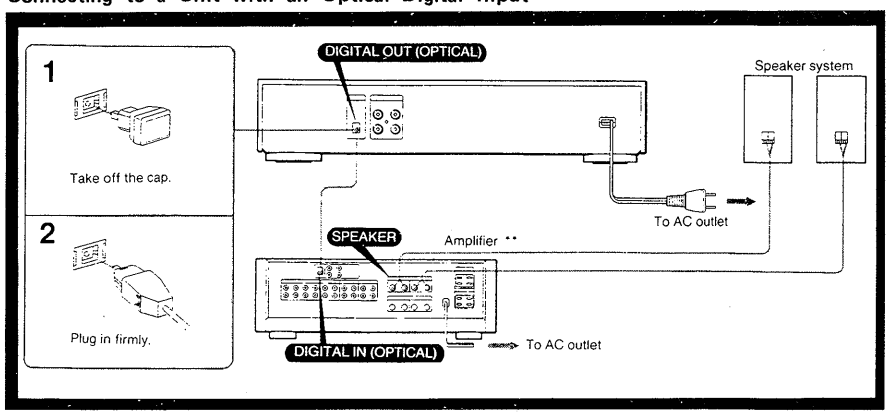
Notes on Connection

- Turn off the power of each unit before making connections.
- Connect the AC power cord last.
- Be sure to insert the plugs firmly into the jacks. Loose connection may cause hum and noise.
- Leave a little slack in the connecting cord to allow for inadvertent shock or vibration.
- Cord plugs and jacks are color coded. Red plugs and jacks are for the right channel (R) and white ones for the left channel (L).

Connecting to an Amplifier without a Digital Input



Connecting to a Unit with an Optical Digital Input



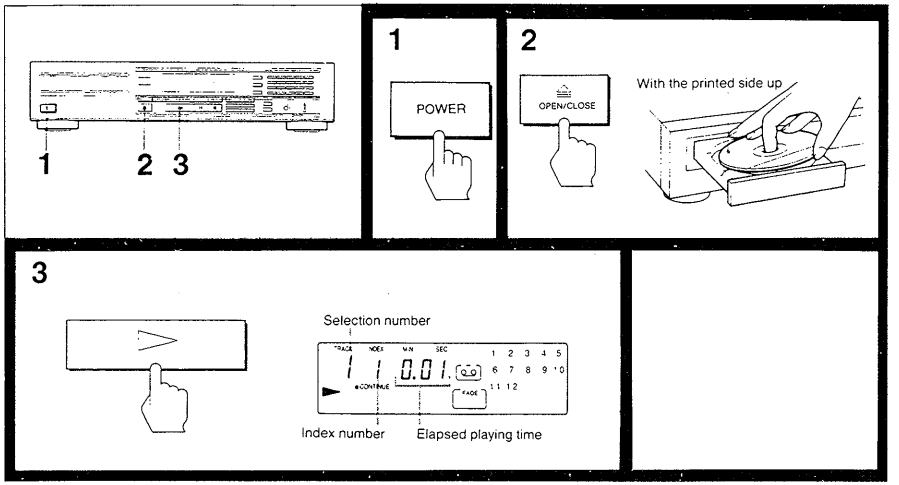
** When you use the VARIABLE LINE OUT jacks*

- Output level can be adjusted with the LINE OUT/PHONE LEVEL control.
- If the LINE OUT/PHONE LEVEL control is turned while recording, the recording level will change even though it is preset on the tape deck.

** You can connect a D/A converter or an amplifier equipped with a D/A converter.

Playing a Disc

Playing the Entire Disc



To stop play

To stop for a moment during play, press ❚❚.
Press ▶ or ❚❚ again, to resume play.
To stop play, press ■.
To stop play and open the tray, press ⏏.

To play a 8cm (3-inch) CD

Place it on the inner circle of the tray. If the disc is provided with an adaptor, first remove it. Do not put a normal CD (12cm/5-inch) on top of an 8 cm CD.

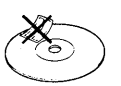
If you turn on the power with a disc in the tray

Play begins automatically from the beginning of the disc. By connecting a commercially available timer, disc play can be started at any desired time.

Notes on handling discs

- To keep the disc clean, handle the disc by its edge. Do not touch the surface.

- Do not stick paper or tape on the disc.



- Do not expose the disc to direct sunlight or heat sources such as hot air ducts, nor leave it in a car parked in direct sunlight as there can be a considerable rise in the temperature.
- After playing, store the disc in its case.

What is this indication?

no d i SC

This indication appears when there is no disc in the disc tray.

Playing Disc

Locating a Particular Selection

You can locate the beginning of a desired selection.

To locate sequentially

To locate the beginning of the current or preceding selection
- Press I◀◀ as many times as required.
- Keep I◀◀ pressed to skip selections.

To locate the beginning of a succeeding selection
- Press ▶▶I as many times as required.
- Keep ▶▶I pressed to skip selections.

To locate directly

Press one of the numeric buttons (1 to 20) to enter the desired selection number.
If a selection number is greater than 20, use the >20 and 1 to 10 buttons. 10 functions as the figure 0.
e.g. To play from selection No.22 Press >20 2 2
To play from selection No.30 Press >20 3 10

Locating a Particular Point in a Selection

You can locate a particular point in the disc during play.

To search quickly while monitoring the sound

To go ahead at high speed
Keep ▶▶ pressed during play and release at the desired point.

To go back at high speed
Keep ◀◀ pressed during play and release at the desired point.

To search quickly by observing the display
Press ❚❚, then keep ◀◀ or ▶▶ pressed. The search speed will increase, but there will be no sound. Find the desired point by observing the display.
Press ❚❚ again at the desired point.

To search slowly while monitoring the sound
Press ◀◀/▶▶ SLOW during play and release at the desired point.

When you press I◀◀ during play
The player locates the beginning of the selection.

When ┐┌ is displayed
If you continuously press ▶▶ at the end of the disc, "┐┌" appears in the window. Press ◀◀ or I◀◀ to return to normal indication.
If you continuously press ◀◀ at the beginning of the disc, play begins automatically from the first selection.

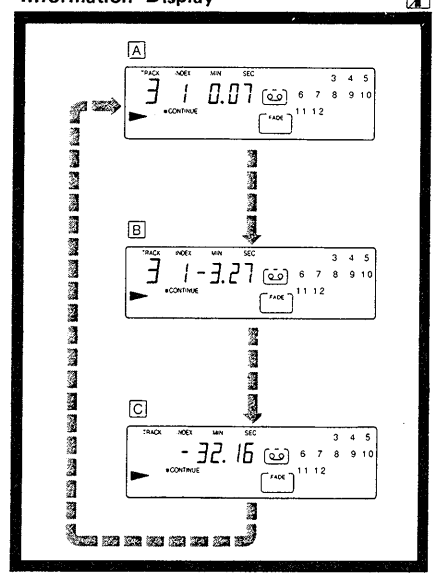
Locating an Index

This function is only possible with a disc on which index numbers are recorded.

Press ▲ or ▶ to locate the desired index number.
The selected index number appears in the display window.

What is index?
This is a number assigned to a section of a selection (for example, to a movement in a symphony) to allow that section to be located easily.

Information Display

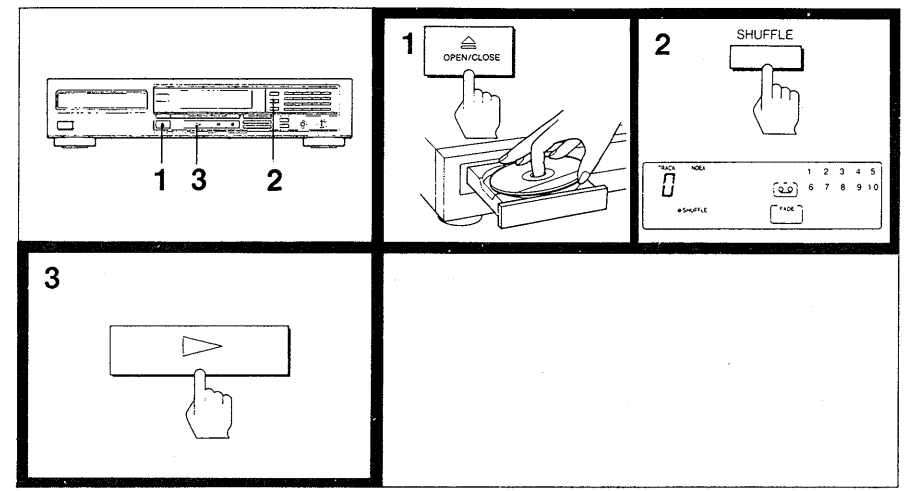


Each time you press TIME during play, the display changes to give you the following information.
A Elapsed playing time
B Remaining time in a selection
If the current selection number is over 20, "----" is displayed.
C Remaining time of the disc
(not displayed during shuffle play)

If you press TIME during stop
The total time and total number of selections will be displayed.
If a program is stored, nothing will change.

Playing in Random Order
–Shuffle Play

You can have the selections played in a random order. The unit will play all the selections, or just the selections you desire.



To stop playing
Press ■.

To cancel shuffle play
Press CONTINUE and enter the unit into the normal playing mode. "SHUFFLE" disappears from the window.

If you press SHUFFLE during play
Shuffle play begins after the current selection is over.

To play only the desired selections in a random order – Delete Shuffle Play
Delete the undesired selections before or during play.

To delete a selection, press the numeric button for that selection. "OFF" will be displayed in the window. You cannot delete a selection which is being played. To choose a selection number over 20, see page 8.

To put back a selection which you have deleted, press the numeric button for that selection. "On" will be displayed in the window.

To put back all the selctions you have deleted, press ■ during the stop mode.

When delete shuffle play ends
The unit returns to the shuffle play mode for the remaining selections.

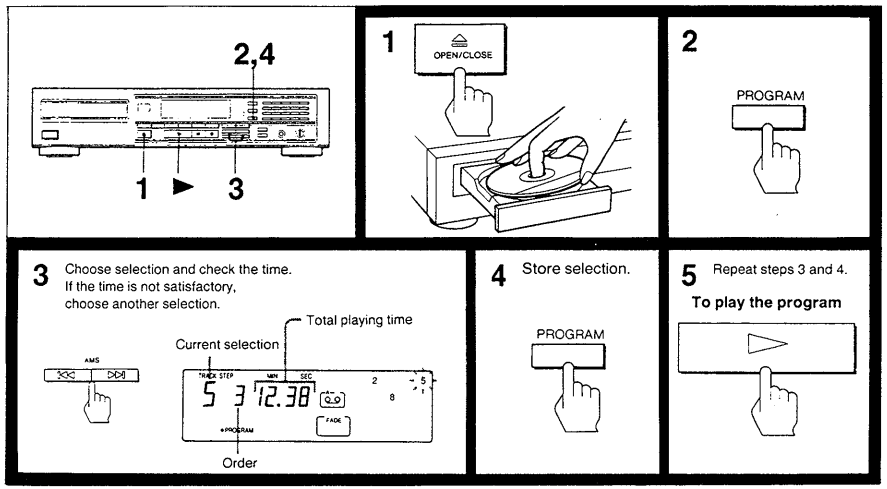
What is this indication?

This indication appears while the player is "shuffling" the selections.

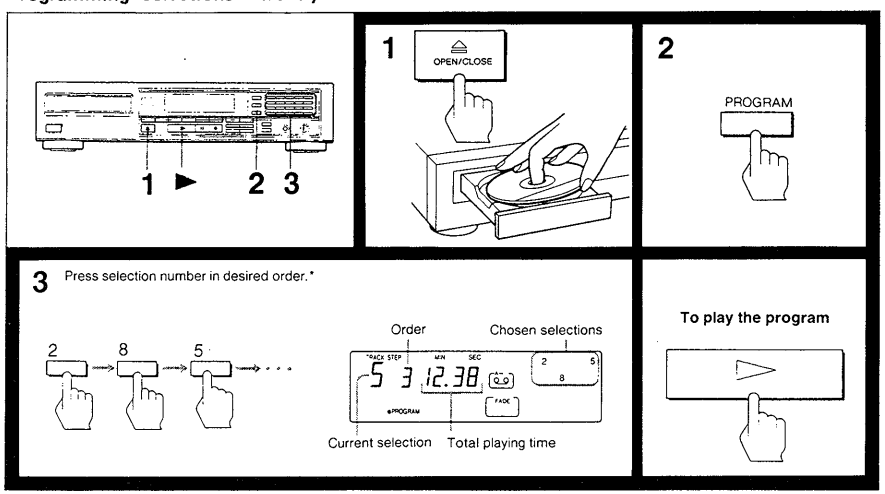
Playing in a Desired Order and Time
—Program Play

You can make a program, which can be divided into programs A and B, by designating up to 24 selections in the order you want them to be played. At the same time, you can adjust the total playing time of the program. The unit will play the disc according to your program. This function is convenient for editing tapes.

Designating the Playing Order-Program Edit



Programming Selections Directly



* To choose a selection number over 20, see page 8.

To stop playing
Press ■.
You can play the same program repeatedly as long as you do not cancel program play or erase the program.

To cancel the program play
Press CONTINUE and enter the unit into the normal playing mode.
The program will be erased.

To erase the entire program
Press ■ once during stop; twice during play.
The program is also erased when you press ⏏ or turn off the unit.

To make a program for editing a tape
You can divide your program into programs A and B by inserting a pause between them. Use this function to make a program for both sides of the tape at one time.

1 Program the selections for program A.
2 Press ❚❚. "B" in the tape indicator and "P" will be displayed in the window and the total playing time will be reset to 0.
3 Program the selections for program B.

When you start playing the selections, program A will be played and then the unit will pause with the chosen selections for program B lighted in the window. Set the tape to the beginning of side B, then press ▶ or ❚❚. The selections for program B will be played.

What is the tape indicator (A–B) ?
During program play, the tape indicator shows you which side of the tape is being played.

A : Side A is being played.
B : Side A has been played and the unit is in the pause mode, or side B is being played.

To check your program
Press CHECK. The first selection in the program will be displayed.
Each time you press CHECK, the next selection in the program will be displayed. After the last selection, "End" will be indicated and the display will soon return to the initial status.

To change your program
You can make the following changes before starting play.

To erase the last selection, press CLEAR.
Each time you press CLEAR, the last selection in the program will be erased.

To add a selection to the end of the program, just press the numeric button for that selection. You can add a selection also during play or pause.

To delete a selection, press CHECK repeatedly until the undesired selection is displayed. Then press CLEAR.

To change the order, press ■ during stop to erase the program. Then repeat the programming procedure from the beginning.

To adjust the blank spaces between selections
You can make all the blank spaces 3 seconds long. See page 16 for details.

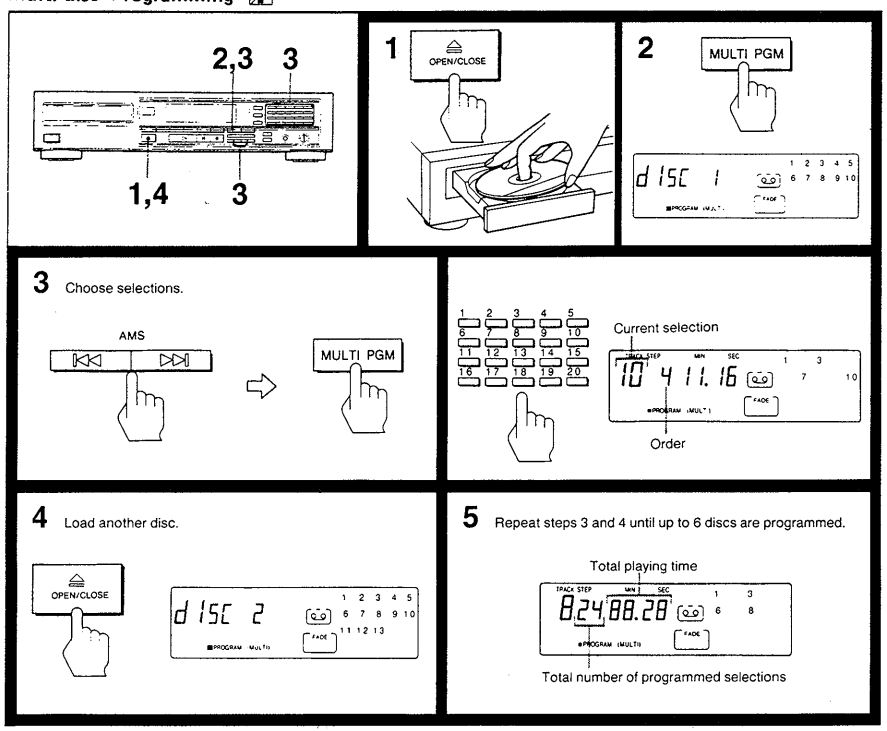
If "----" is displayed instead of the actual time
– you have programmed a selection number over 20.
– the total time has exceeded 100 minutes.

To check the remaining time
Press TIME once to see the remaining time of the selection being played; twice to see the total remaining time; once more to return to the initial display.
If you have divided the program into A and B by inserting a pause between them, the display shows the remaining time until the pause.
If you have programmed a selection number over 20, "----" is displayed instead of the actual time.

Playing Discs in a Desired Order
—Multi-disc Program

A maximum of 24 selections can be programmed from up to 6 discs in the order you want them to be played. At the same time, you can adjust the total playing time of the program.

Multi-disc Programming



You can program the same disc as many times as you want until the total number of programmed selections reaches 24.

To play the program
See the succeeding page.

If "----" is displayed instead of the actual time
-you have programmed a selection number over 20.
-the total time has exceeded 100 minutes.

If you insert the seventh disc
"DISC FULL" appears in the window.

Notes
- Repeat play, time edit, and time fade do not function during multi-disc program play.
- A pause can not be programmed in the multi-disc program.

To check your program
See the preceding page.

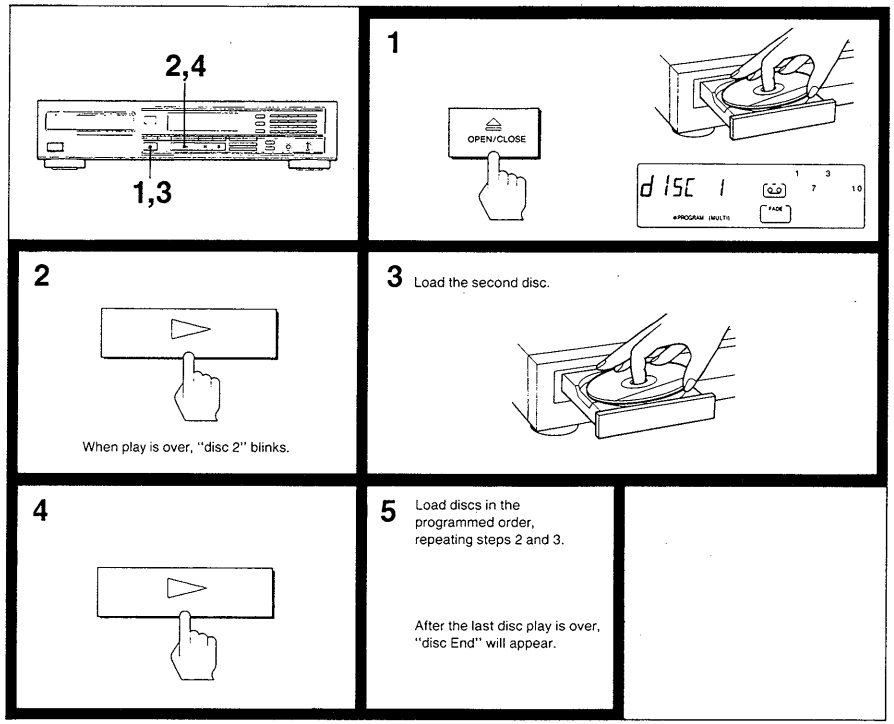
To change your program
You can make the following changes before starting play.

To erase the last selection, load the last programmed disc and press CLEAR.
Each time you press CLEAR, the last programmed selection from the disc will be erased.

To continuously erase the selections, repeat the same procedure, loading the discs in the reverse order you have programmed.

To change the order, press ■ during stop to erase the program. Then repeat the programming procedure from the beginning.

Playing the Multi-disc Program


2,4
1,3
1
OPEN/CLOSE
d ISC 1
2
When play is over, "disc 2" blinks.
3 Load the second disc.
4
5 Load discs in the programmed order, repeating steps 2 and 3.
After the last disc play is over, "disc End" will appear.

To stop playing
Press CONTINUE and enter the unit into the normal playing mode.
The program will be erased.

To erase the entire program
Press ■ once during stop; twice during play.
The program is also erased when you turn off the unit.

When the program has been played
The unit will be ready to repeat the same program again.

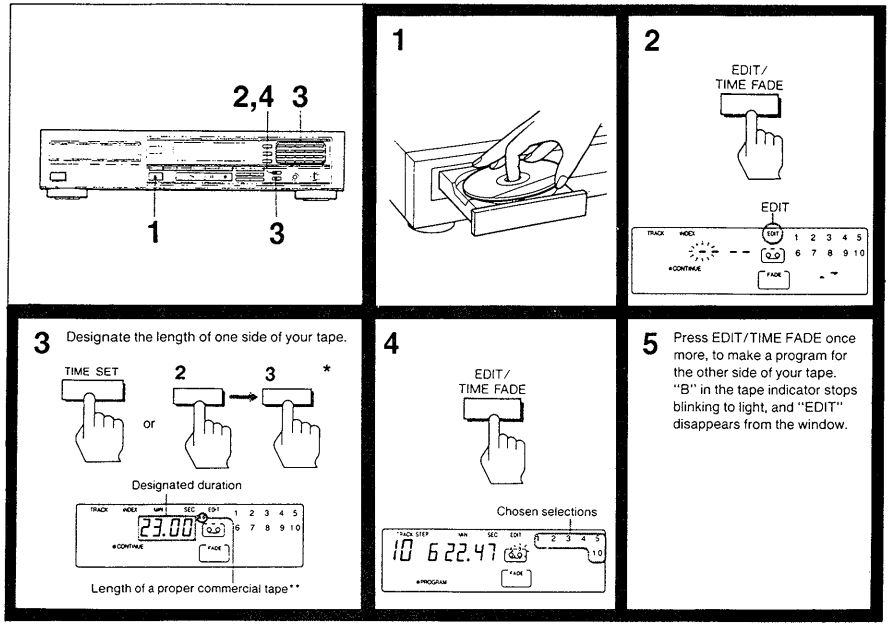
If you insert a disc in wrong order
The disc will be played even in wrong order, unless it has been played yet.

To check the disc number inserted
Press TIME during the stop mode. The disc number appears in the window.

To check the remaining time
Press TIME once to see the remaining time of the selection being played; twice to see the total remaining time; once more to return to the initial display.
If you have programmed a selection number over 20, "----" is displayed instead of the actual time.

Designating the Total Playing Time
—Time Edit

You can designate a time and the unit will make 2 different programs of selections each fitting within that period. Use this function, by designating the length of your tape, for editing both sides of a tape. This function, however, can not be used with the multi-disc program. (See page 12.)



* Press 10 for "0".
You need not press keys for seconds, unless required.

To play the program
Press ▶.
The selections for side A will be played and then the unit will pause. Set the tape to the beginning of side B, then press ▶ or ❚❚. The selections for side B will be played.

To check or erase the program and to stop or cancel the play
See pages 12 and 13.

To designate a different time for each side
Execute steps 1 to 4, then press ❚❚. "EDIT" disappears from the window. Execute steps 2 to 4 for the other side.

If your disc has more than 20 selections
Selections over number 20 cannot be programmed with the time edit function; use the programming procedure on page 10.

** Pressing TIME SET shows you the length of a proper commercial tape (46, 54, 60, or 90 minutes) required for recording.
Each time you press TIME SET, the play duration for one side of the tape is also displayed as follows.
→ 23.00 → 27.00 → 30.00 → 45.00 → Cancelled

To include desired selections in the program
1 Make your own program of the desired selections. See page 10 for instructions.
2 Follow the above procedure.
Just designate the length of your tape; you need not subtract the length of your program. The unit will place your selections at the beginning of its program and add other selections to fit the remaining time.

If you include desired selections in the program
The last selection of your choice will be replaced with another selection for the unit to fit the program into the designated period as close as possible.

Playing Repeatedly
—Repeat Play

You can choose between two different repeat play modes. One repeats one or all selections, the other repeats any particular portion you like. Repeat play, however, does not function during multi-disc program play.

Repeating Selections

To repeat all selections
Press REPEAT once.
(The unit will repeat in the current play mode after completing the first play.)

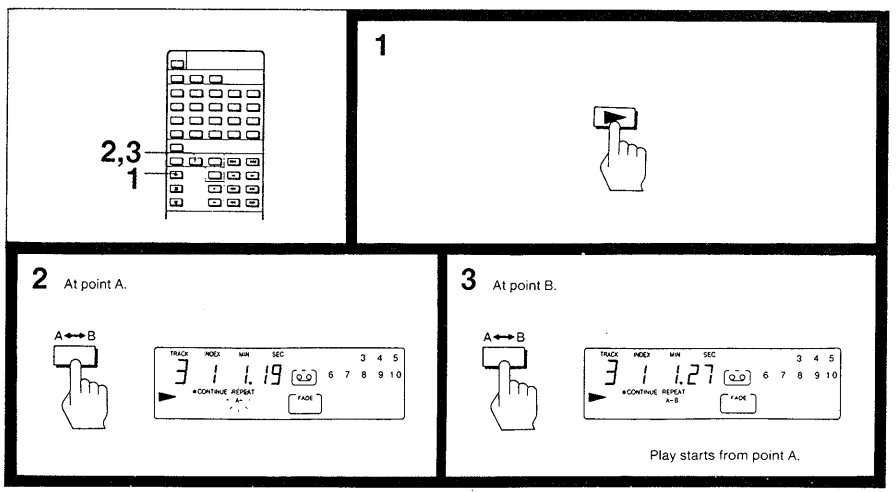
Play mode	Selections to be repeated
Continuous play (page 7)	All the selections
Program play (page 10)	All the programmed selections in the same order
Shuffle play (page 9)	All the selections that the unit reshuffles
Delete shuffle play (page 9)	All the remaining selections that the unit reshuffles

To repeat the current playing selection
Press REPEAT twice.
(Not operable during shuffle or program play.)

To cancel repeat play
Press REPEAT for the third time.

Repeating a Particular Portion— A ↔ B Repeat

You can repeat a portion on the disc by designating the starting point A and the ending point B.



To cancel A ↔ B repeat
Press CLEAR/REPEAT (or REPEAT on the main unit).

Going back to point A from any point on the disc
Simply press ▶. When point A is stored, you can go back there in any play mode other than multi-disc program play. You need not designate point B.

When you designate A ↔ B repeat during shuffle or program play
You cannot designate point A and B in two different selections.

Tips on Editing Tapes

The following functions are convenient for editing your own tapes.
Time Fade and Fade in/Fade out cannot be operated when the DIGITAL (optical) OUT is used for connections.

Fading in/Fading out

You can have the play fade in or fade out from 2 to 10 seconds.

To designate the fading duration
1. Press FADER during the stop mode.
2. Designate the fading duration within the range of 2 to 10 seconds by pressing ◀◀ or ▶▶.

No designation makes the fading duration 5 seconds long.

To end the play fading out
Press FADER when you want to start fading out.
"▮▮▸▬" flashes in the window, and play fades out for the designated duration and enters the pause mode.

To restart the play fading in
Press FADER.
"▬◂▮▮" flashes in the window, and play fades in for the designated duration.

Inserting a Blank Space between Selections —Auto Space

You can insert a 3-second blank space between each selection. The blank space enables you to locate selections when using a tape deck with the automatic selection search function.

Before starting play, press AUTO SPACE so that "AUTO SPACE" is displayed in the window.
A blank space of approximately 3 seconds will be inserted between each selection.

To cancel the auto space function
Press AUTO SPACE so that "AUTO SPACE" disappears from the window.

Fading Out at the Desired Time—Time Fade

You can have the play fade out at the end by designating the play duration. Once the time fade is set, it functions twice for editing both sides of a tape. You can change discs without cancelling this function and enjoy it in any play mode other than multi-disc program play.

1 Press EDIT/TIME FADE twice during the stop mode.
"TIME FADE" and "A" in the tape indicator are displayed in the window.

2 Set the desired play duration, using either the TIME SET button or numeric buttons.

a) TIME SET button – Useful when using commercial tapes (46-, 54-, 60- and 90-minute tapes).
Each time you press TIME SET, the play duration for one side of the tape is displayed as follows.
→ 23.00 → 27.00 → 30.00 → 45.00 → Cancelled
At the same time, the length of a proper commercial tape is indicated above the tape indicator.

b) Numeric buttons (1 – 10) – Useful when setting the time for one side of the tape as you want.
You need not press buttons for seconds, unless required.

3 To start play, press ▶.
Before the unit enters the pause mode at the set time with "B" in the tape indicator lighted in the window, play starts to fade out from 2 to 10 seconds according to the fading duration you have designated.

If you want to start the play fading in
1 Press ▮▮.
The unit enters the pause mode.
2 Press EDIT/TIME FADE once.
"TIME FADE" is displayed.
3 Set the desired play duration, following the step **2** above.
4 To start play, press FADER.
Play will start fading in and end at the set time fading out.

To start play for the other side of the tape
Press ▶, ▮▮, or FADER. (Pressing FADER starts the play fading in.)
When this play ends, time fade is cancelled.

To cancel time fade
Press EDIT/TIME FADE again.
Time fade is also cancelled when ◀◀/▶▶, ⏮/⏭ or FADER is pressed during play.

To display the time remaining until the time set
Press TIME twice. In the shuffle play mode, however, the time remaining until the fade-out time is not displayed.

Maintenance

Lacating the Portion with the Largest Volume —Peak Search

You can locate the portion with the highest input level to adjust the recording level.

Before starting play, press PEAK SEARCH.
"PEAK" appears in the window and starts blinking as the peak search begins functioning. It takes time for the unit to carry out the peak seach. On completing the search, the unit starts repeating the portion with the peak volume.

While the unit is repeating the peak portion
– Press ▶ to start play from the first selection,
– Press ▮▮ to enter the unit into the pause mode at the beginning of the first selection.

To cancel the peak search
Press ■. "PEAK" disappears from the window.

On the peak search
The unit scans input levels of the whole CD and determines the peak (maximum input level) among them. The peak determined with this function is sometimes slightly different from the real one. In addition, portions determined as a peak may vary each time this function is carried out even on the same CD. The difference between the determined and the real peak is, however, negligible enough for you to adjust the recording level.

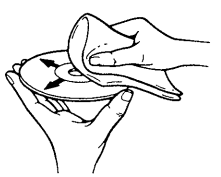
If you press PEAK SEARCH before delete shuffle or program play
The unit scans the input levels of the chosen selections only.

Cleaning Your Unit

Clean the cabinet, panel and controls with a soft cloth lightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzine.

Cleaning Discs

When a disc becomes dirty, clean it with a cleaning cloth. Wipe the disc from the center out.



Do not use solvents such as benzine, thinner, commercially available cleaners or anti-static spray intended for analog discs.

- **Description of IC401 (UPD75212A)**

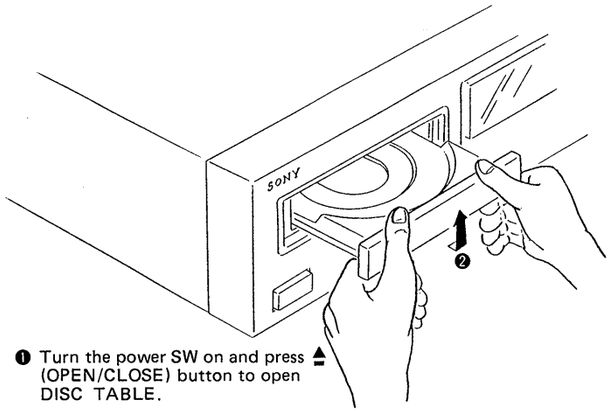
Pin Function

Pin No.	Pin name	I/O	Description
1	d	O	Display segment d
2	c	O	Display segment c
3	b	O	Display segment b
4	a	O	Display segment a
5	SCOR	I	SUB-Q sync input
6	CLK	O	SSP, DSP data clock D/F serial data clock
7	DATA	O	SSP, DSP data D/F (digital filter) attenuate data
8	$\overline{\text{TIMER}}$	I	0V (Timer start switch)
9	SIRCS	I	Remote commander input
10	—	—	0V
11	ADJ	I	ADJ mode terminal
12	SENSE	I	SSP, DSP sense terminal
13	AFADJ	I	AFADJ mode terminal
14	FOK	I	FOK input
15	GFS	I	GFS input
16	SUBQ	I	SUB-Q serial data
17	SQCLK	O	SUB-Q read clock
18	XLT	O	SSP, DSP data latch pulse
19	PRGL	O	D/F data latch pulse
20	LDON	O	Laser on/off (Laser on "H")
21	KEY0	I	Key scan 0
22	KEY1	I	Key scan 1
23	KEY2	I	Key scan 2
24	KEY3	I	Key scan 3
25	VLUP	O	Line out volume level up output
26	VLDOWN	O	Line out volume level down output
27	LED	O	Line volume LED control terminal
28	AMUTE	O	Audio mute out(mute on "H")
29	DFCTSW	O	DEFECT circuit control terminal
30	X1	—	Main sistem clock connection
31	X2	—	Main sistem clock connection
32	Vss	—	GND
33	XT1	—	0V (Sub sistem clock connection)
34	XT2	—	0V (Sub sistem clock connection)
35	LODOUT	O	Loading out output
36	LODIN	O	Loading in output
37	$\overline{\text{OUTSW}}$	I	Loading out switch
38	$\overline{\text{INSW}}$	I	Loading in switch
39	$\overline{\text{RESET}}$	I	RESET input
40	8G	O	Display grid 8

Pin No.	Pin name	I/O	Description
41	7G	O	Display grid 7
42	6G	O	Display grid 6
43	5G	O	Display grid 5
44	4G	O	Display grid 4
45	3G	O	Display grid 3
46	2G	O	Display grid 2
47	1G	O	Display grid 1
48	—	—	No connection
49	—	—	No connection
50	p	O	Display segment p
51	o	O	Display segment o
52	n	O	Display segment n
53	m	O	Display segment m
54	l	O	Display segment l
55	k	O	Display segment k
56	VLOD	I	Display glid.segment low Voltage input
57	VPRE	I	Display glid.segment Voltage supply
58	j	O	Display segment j
59	i	O	Display segment i
60	h	O	Display segment h
61	g	O	Display segment g
62	f	O	Display segment f
63	e	O	Display segment e
64	VDD	I	+5V

SECTION 2
DISASSEMBLY

Removal of LOADING PANEL

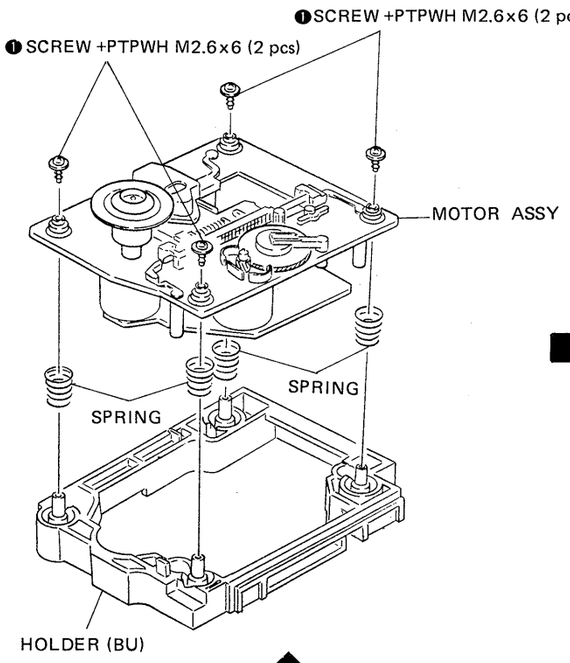


❶ Turn the power SW on and press ⏏ (OPEN/CLOSE) button to open DISC TABLE.

❷ Pull up LOADING PANEL with twistying it as shown by arrow ❷ .

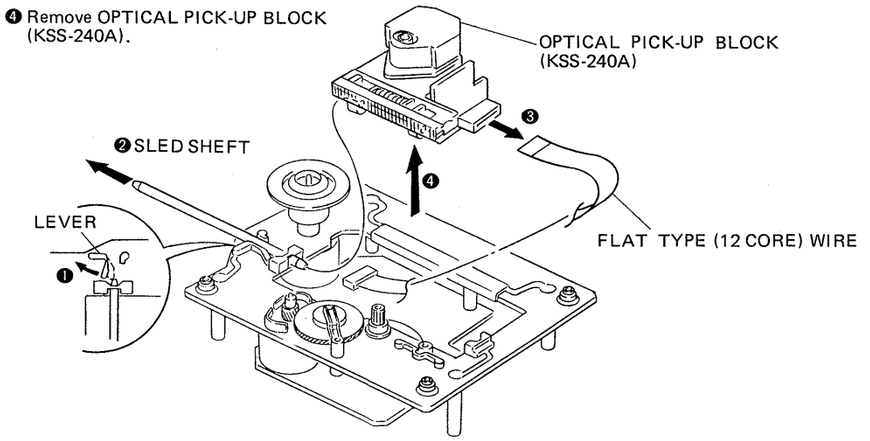
Removal of MOTOR ASSY

❶ Remove 4 screws.



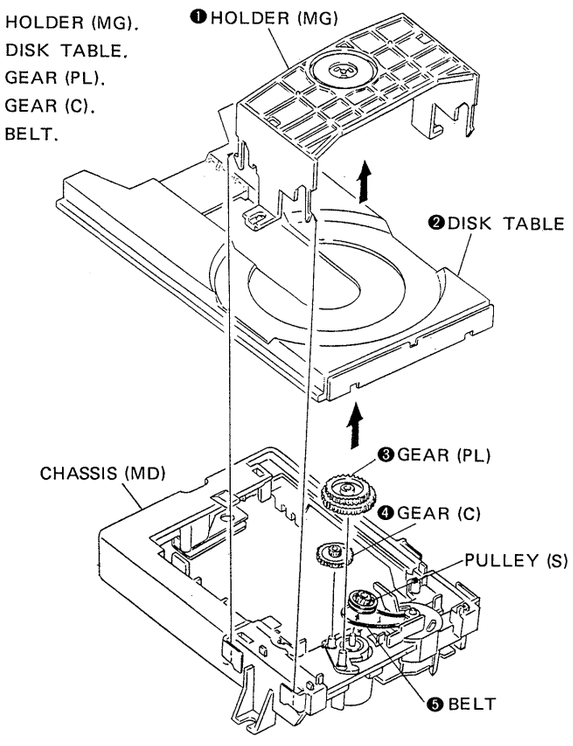
Removal of OPTICAL PICK-UP BLOCK (KSS-240A)

❶ Push the lever in the direction of arrow.
❷ Remove SLED SHAFT.
❸ Remove FLAT TYPE (12 CORE) WIRE from connector.
❹ Remove OPTICAL PICK-UP BLOCK (KSS-240A).



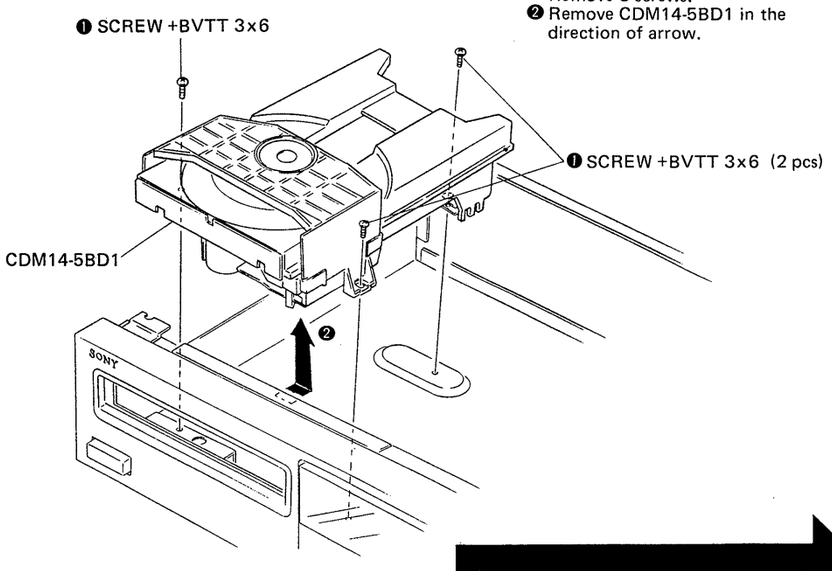
Removal of BELT

❶ Remove HOLDER (MG).
❷ Remove DISK TABLE.
❸ Remove GEAR (PL).
❹ Remove GEAR (C).
❺ Remove BELT.



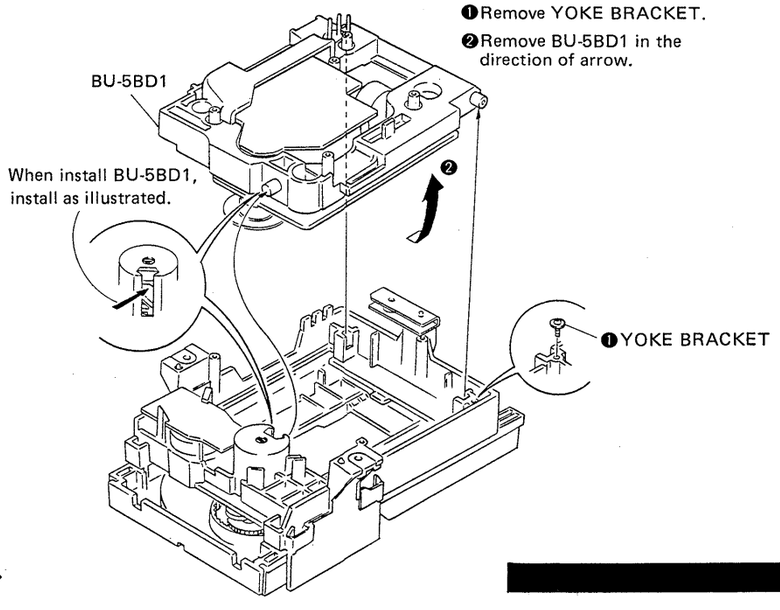
Removal of CD MECHANISM BLOCK (CDM14-5BD1)

❶ Remove 3 screws.
❷ Remove CDM14-5BD1 in the direction of arrow.



Removal of BASE UNIT (BU-5BD1)

❶Remove YOKE BRACKET.
❷Remove BU-5BD1 in the direction of arrow.



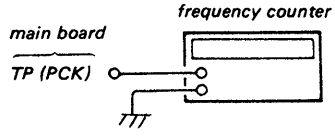
SECTION 3
ADJUSTMENTS

ELECTRICAL ADJUSTMENTS

1. Perform adjustments in the order given.
2. Use YEDS-18 (Part No. 3-702-101-01) disc unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.

RF PLL Frequency Check

Procedure:

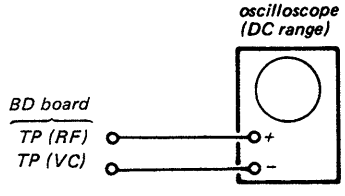


1. Ground test point TP (ASY).
2. Connect the frequency counter to the test points TP (PCK) and GND.
3. Turn POWER switch on.
4. Check of TP (PCK) on the frequency counter is 4.3218MHz ±30kHz.

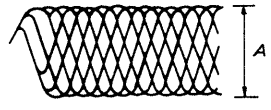
Focus Bias Adjustment

This adjustment should be made after replacing the Optical Pick-up Block.

Procedure:



1. Connect oscilloscope to the test points TP (RF) and TP (RF VCG).
2. Turn POWER switch on.
3. Put the disc (YEDS-18) in and press ▷ button.
4. Check for an optimum waveform eye pattern. Optimum eye pattern means that shape "◇" can be clearly distinguished at the center of the waveform.

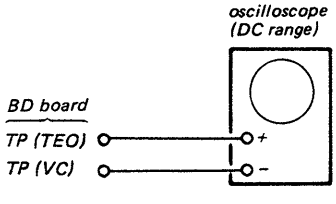


A=1.3 ±0.3Vp-p

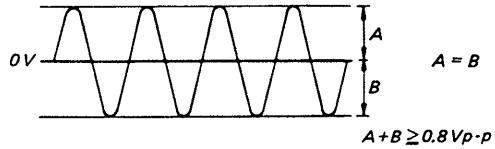
E-F Balance Adjustment

This adjustment should be made after replacing the Optical Pick-up Block.

Procedure:



1. TP (ADJ) and TP (TES) connect to the GND.
2. Connect the oscilloscope to the test points TP (TEO).
3. Turn POWER switch on.
4. Put the disc (YEDS-18) in and press ▷ button.
5. Check the traverse waveform is symmetrical above and below the 0V line.
6. After adjustment, cancel the adjustment mode.



A+B ≥0.8Vp-p

Focus/Tracking Gain Adjustment

A frequency response analyzer is necessary in order to perform this adjustment exactly.

However, this gain has a margine, so even if it is slightly off, there is no problem. Therefore, this adjustment is not recomended generally to be performed.

Focus/tracking gains determine the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when the 2-axis device operate.

However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise when the 2-axis device operates increases.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.
- When gain adjustment is off, the symptoms below appear.

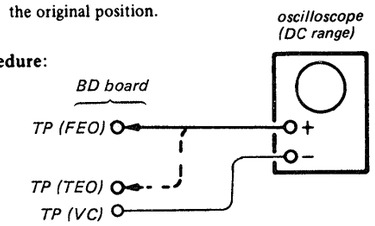
Symptoms \ Gain	Focus	Tracking
• The time until music starts becomes longer for STOP →▷PLAY or automatic selection (⏮ ⏭buttons pressed. (Normally takes about 2 seconds.)	low	low or high
• Music does not start and disc continues to rotate for STOP→▷PLAY or automatic selection (⏮ ⏭ buttons pressed.)	–	low
• Disc table opens shortly after STOP→▷PLAY.	low or high	–
• Sound is interrupted during PLAY. Or time counter display stops progressing.	–	low
• More poise during 2-axis device operation.	high	high

The following is a simple adjustment method.

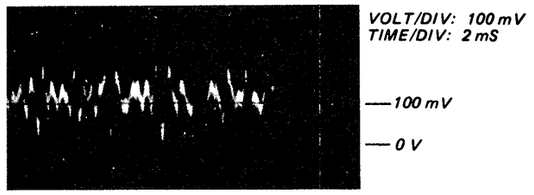
– Simple Adjustment –

Note: Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procedure:

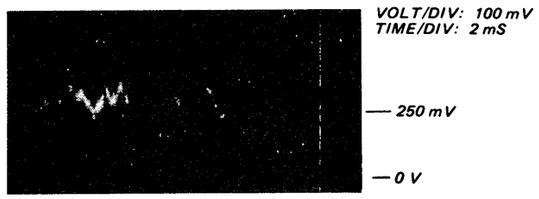


1. Keep the set flat.
   If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2 axis device.
2. Insert the disc (YEDS-18) and press ▷ PLAY button.
3. Connect the oscilloscope to TP (FEI) and TP (FEO).
4. Adjustment RV101 so that the waveform is as shown in the picture below. (focus gain adjustment)

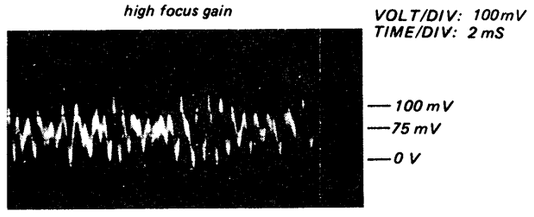


- Incorrent Examples (DC level is quite different from the adjusted waveform) (below)

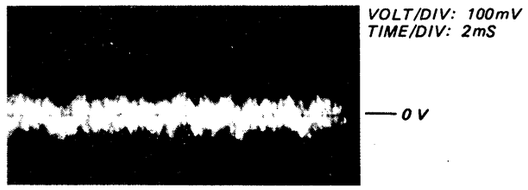
low focus gain



high focus gain

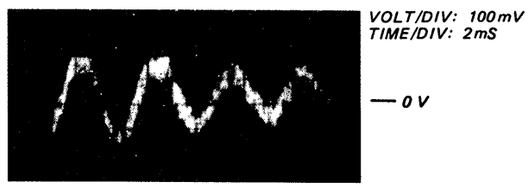


5. Connect the oscilloscope to TP (TEO).
6. Adjust RV102 so that the waveform is as shown in the picture below. (tracking gain adjustment)

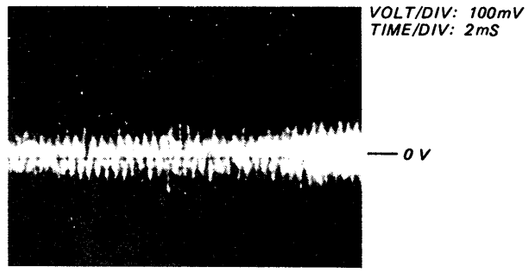


- Incorrect Examples (fundamental wave appears)

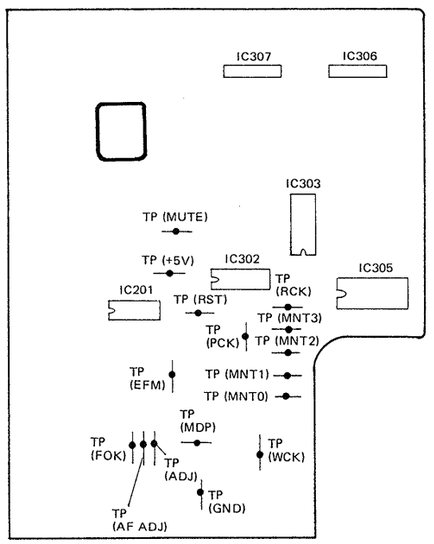
low tracking gain



high tracking gain
(higher frequency of the fundamental wave than above)

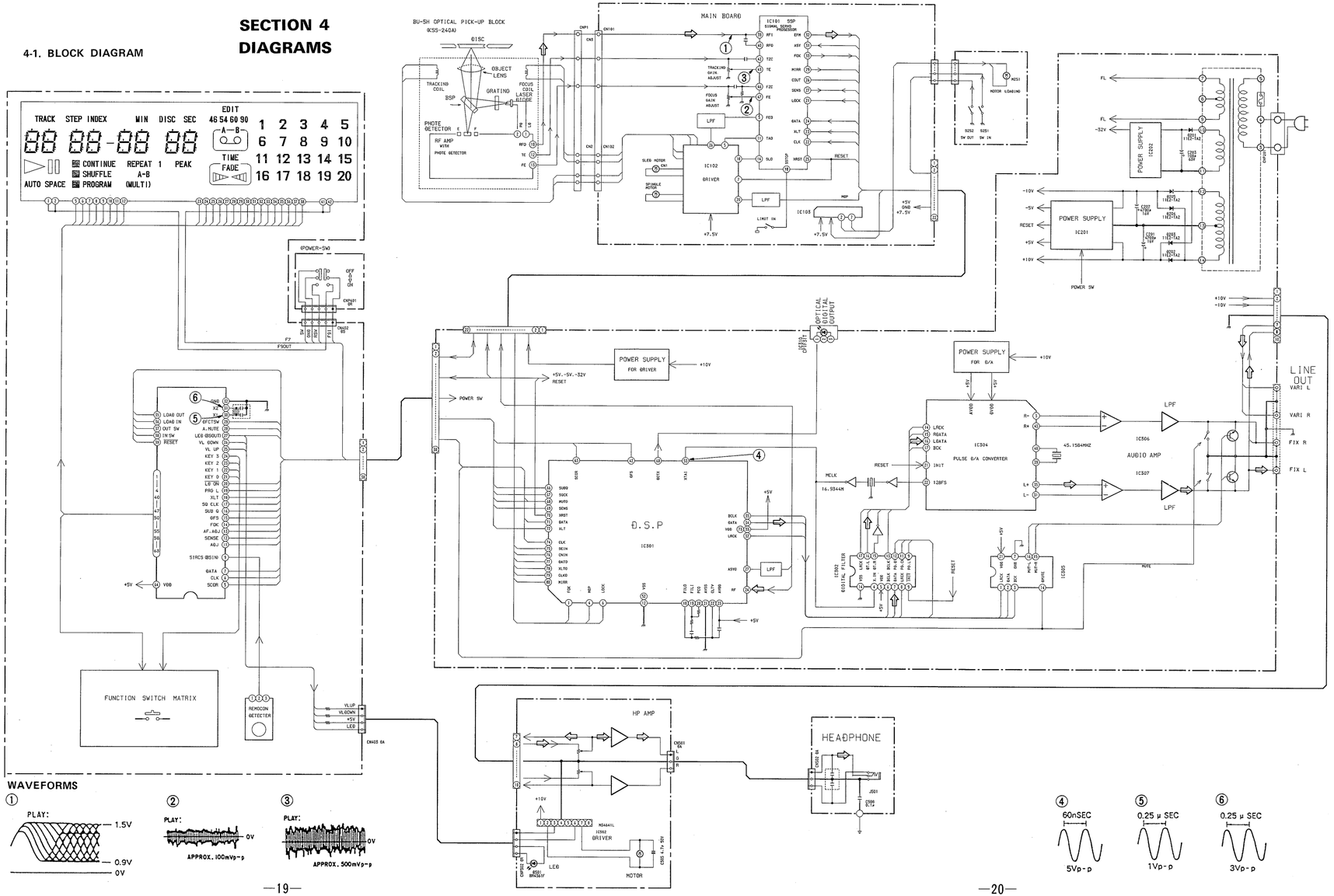


Adjustment Location:
MAIN BOARD –Component Side–



SECTION 4
DIAGRAMS

4-1. BLOCK DIAGRAM



WAVEFORMS

① PLAY: 1.5V / 0.9V / 0V

② PLAY: 0V, APPROX. 100mVp-p

③ PLAY: 0V, APPROX. 500mVp-p

④ 60nSEC, 5Vp-p

⑤ 0.25 μ SEC, 1Vp-p

⑥ 0.25 μ SEC, 3Vp-p

4-2. SEMICONDUCTOR LEAD LAYOUTS

RD5.1ES-B2
RD5.1JS-B1
RD8.2JS-B1
RD9.1ES-B2
1SS202-1
11ES2
11EQS04

2SB1094-L
2SD1266-P
2SD1944-K

2SA1175-HFE

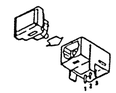
BR3461

2SC2878B

DTA114ES
DTC114ES
DTC144ES
2SC2458-YGR

DTC144EK

GP1F31T



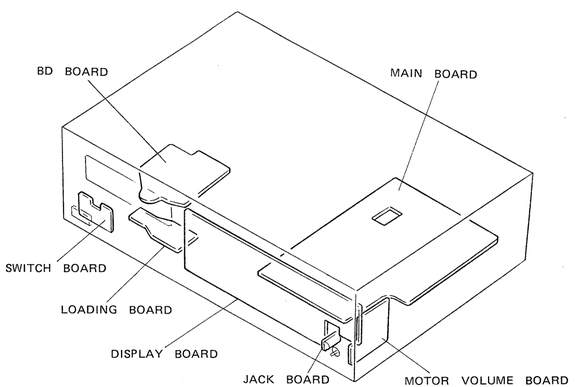
2SK246GR

DTC114EF

RD4.7M-B1

GP1U52XB

4-3. CIRCUIT BOARDS LOCATION



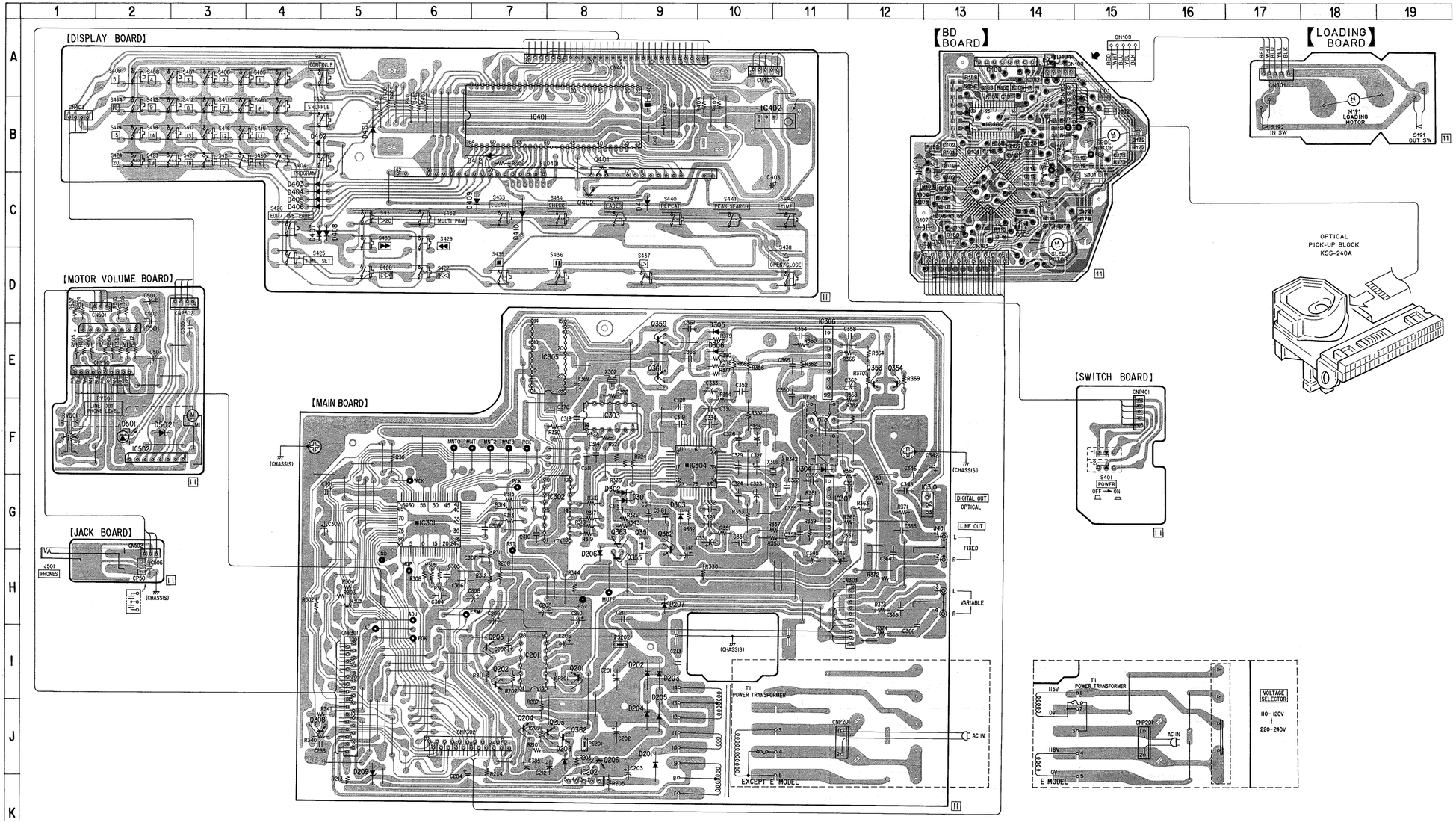
4-4. PRINTED WIRING BOARDS

● See page 19 for semiconductor lead layouts.

● **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
D101	A-14	IC201	I-7
D201	J-9	IC202	J-8
D202	I-9	IC301	G-6
D203	I-9	IC302	G-8
D204	J-9	IC303	F-8
D205	I-9	IC304	F-9
D206	H-8	IC305	E-8
D207	H-9	IC306	E-11
D208	J-8	IC307	G-11
D209	J-5	IC310	G-13
D301	G-9	IC401	B-7
D302	G-8	IC402	B-10
D303	G-9	IC501	E-2
D304	F-11	IC502	F-2
D305	E-10		
D306	E-10	Q101	C-14
D401	B-5	Q201	I-8
D402	B-4	Q202	I-7
D403	C-4	Q203	J-8
D404	C-4	Q204	J-7
D405	C-4	Q205	I-7
D406	C-4	Q206	J-8
D407	C-4	Q308	J-4
D408	C-5	Q351	G-9
D409	C-7	Q352	G-9
D410	C-7	Q353	E-12
D411	C-9	Q354	E-12
D412	B-7	Q355	H-9
D501	F-2	Q359	E-9
D502	F-2	Q361	E-9
		Q362	J-8
IC101	C-13	Q363	G-8
IC102	B-13	Q401	B-8
IC103	A-13	Q402	C-8

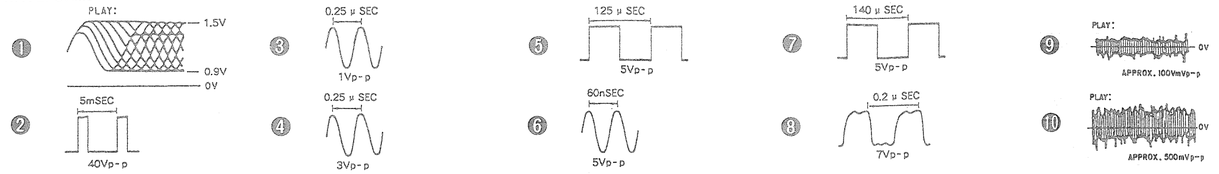
- ○——: parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- ▒▒▒: Pattern on the side which is seen.
- ▒▒▒: Pattern of the rear side.



4-5. SCHEMATIC DIAGRAM

● See page 26 for IC block diagram.

WAVEFORMS


① PLAY: 1.5V 0.9V 0V
② 5mSEC 40Vp-p
③ 0.25 μ SEC 1Vp-p
④ 0.25 μ SEC 3Vp-p
⑤ 125 μ SEC 5Vp-p
⑥ 60nSEC 5Vp-p
⑦ 140 μ SEC 5Vp-p
⑧ 0.2 μ SEC 7Vp-p
⑨ PLAY: 0V APPROX. 100mVp-p
⑩ PLAY: 0V APPROX. 500mVp-p

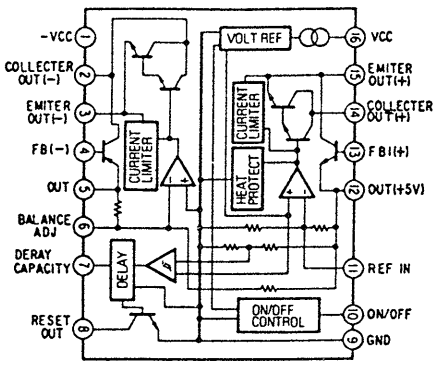
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- Δ : internal component.
- ▭▭▭ : B+ lines.
- ▭▭▭ : B− lines.
- Voltages are taken with a VOM. (input impedance 10 MΩ) Voltage variations may be noted due to normal production tolerances.
  no mark : PLAY
  ( ) : STOP
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇒ : CD ⇛ : digital out

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

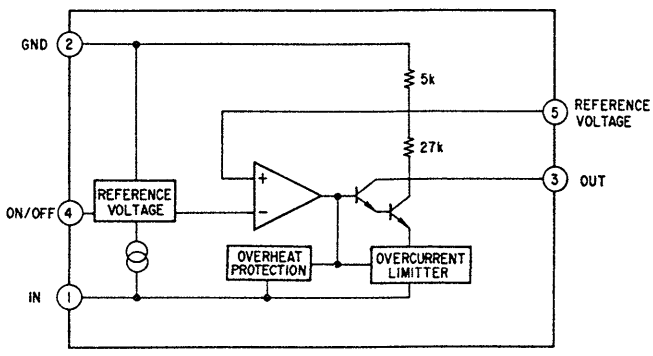
Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

4-6. IC BLOCK DIAGRAM

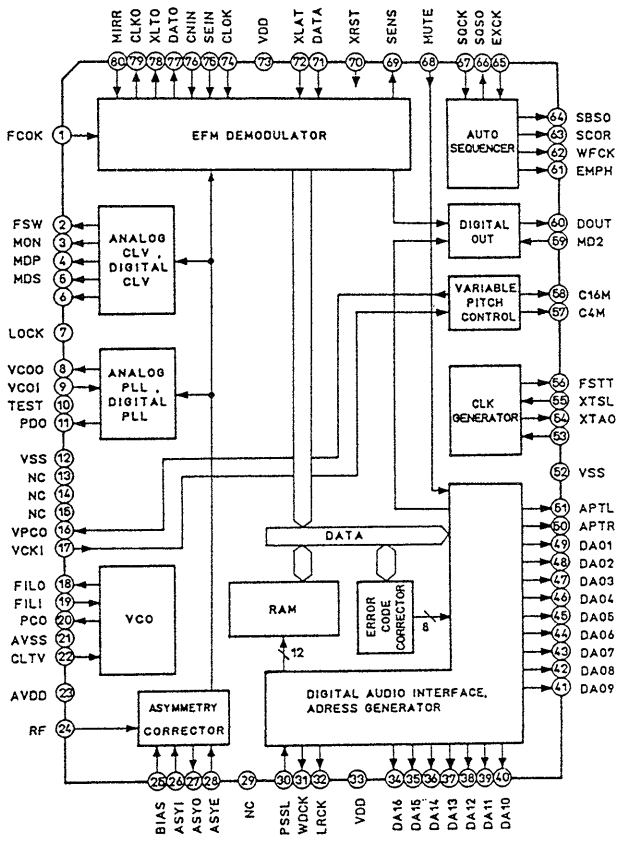
IC201 M5290P-16



IC202 M5293L

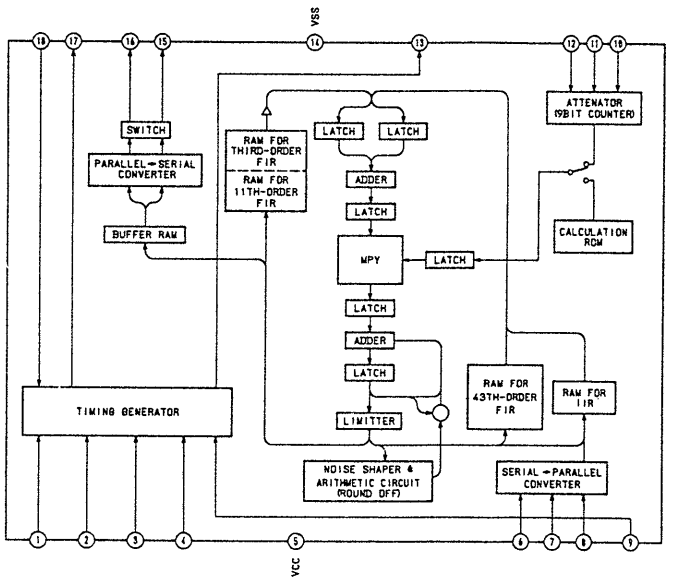


IC301 CXD2500Q

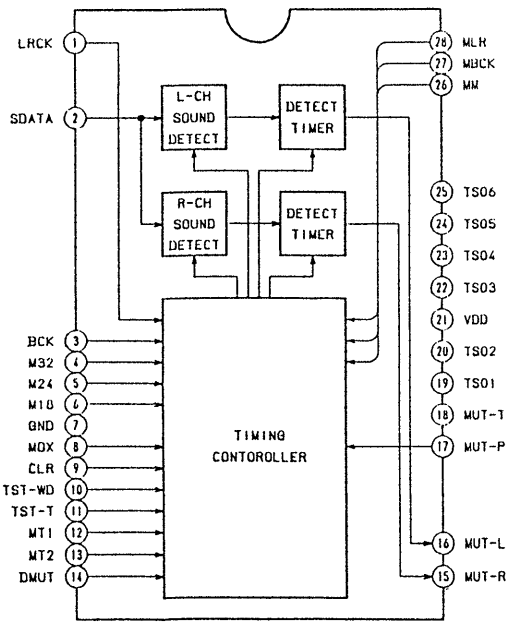


CDP-209ES/790

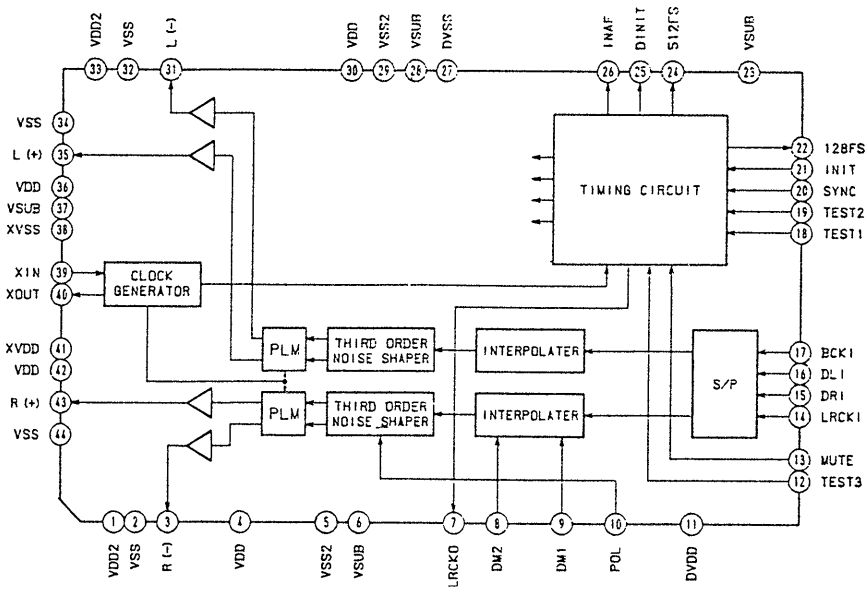
IC302 CXD2551P



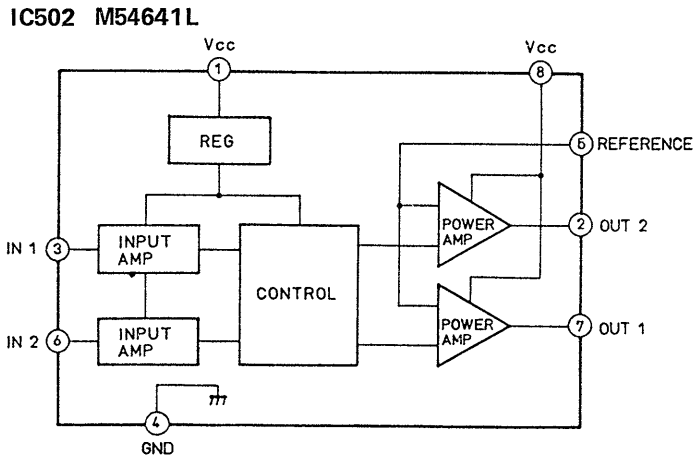
IC305 CXD2553S


LRCK
SDATA
L-CH SOUND DETECT
R-CH SOUND DETECT
DETECT TIMER
DETECT TIMER
MLK MBCK MM
TSO6 TSO5 TSO4 TSO3 VDD TSO2 TSO1 MUT-T MUT-P MUT-L MUT-R
BCK M32 M24 M16 GND MOX CLR TST-WD TST-T MT1 MT2 DMUT
TIMING CONTOROLLER

IC304 CXD2552Q


VDD2 VSS L (-) VDD VSS2 VSUB DVSS INAF DINIT 512FS VSUB
VSS L (+) VDD VSUB XVSS XIN XOUT XVDD VDD R (+) VSS
CLOCK GENERATOR
TIMING CIRCUIT
128FS INIT SYNC TEST2 TEST1
PLM
THIRD ORDER NOISE SHAPER
INTERPOLATER
S/P
BCKI DLI DRI LRCKI MUTE TEST3
VDD2 VSS R (-) VDD VSS2 VSUB LRCKO DM2 DM1 POL DVDD

IC502 M54641L



SECTION 5
EXPLODED VIEWS

SEE ADDITIONAL INFORMATION

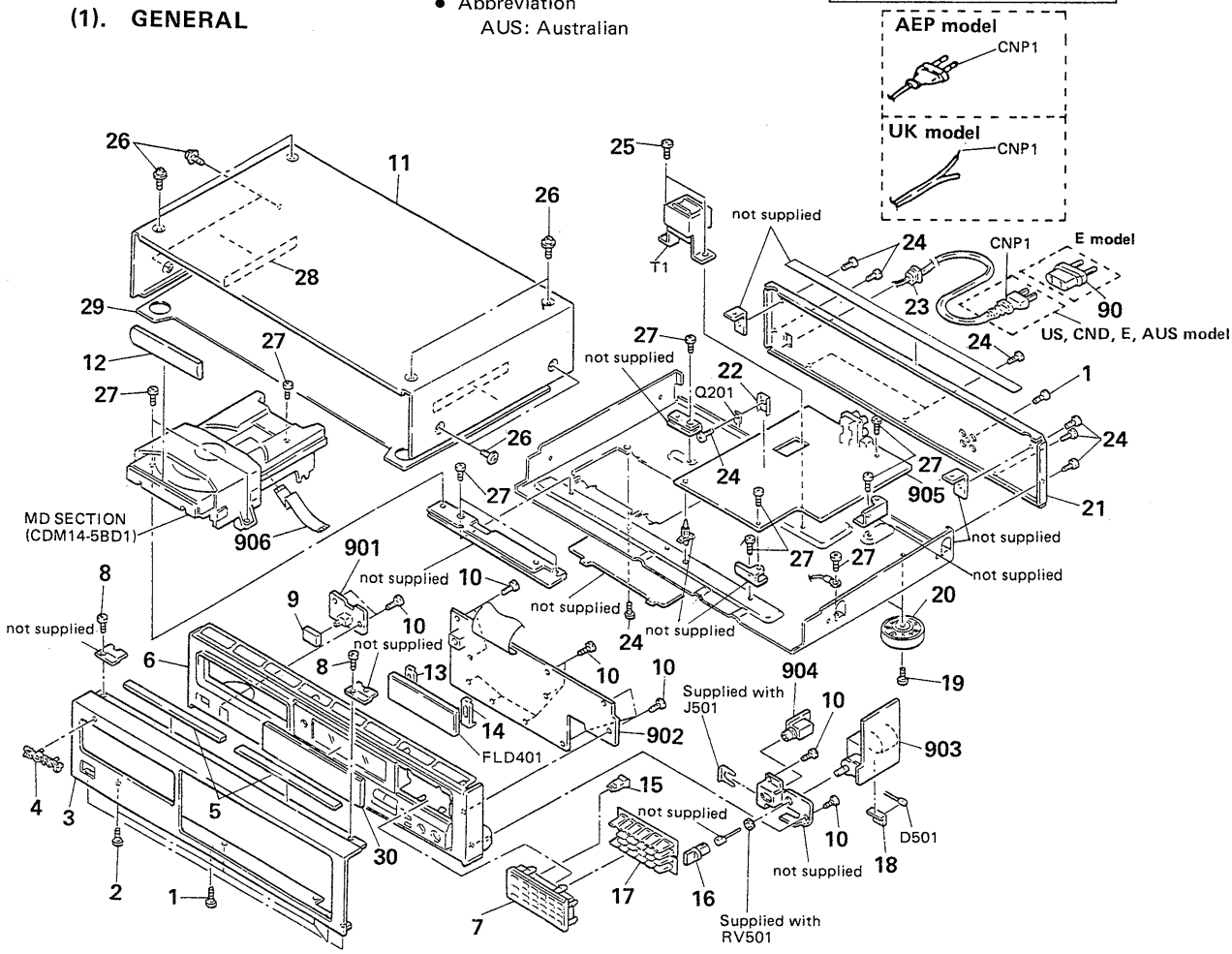
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts
  Example:
  (RED) . . . KNOB, BALANCE (WHITE)
  ↑ ↑
  Cabinet's Color Parts' Color
- Abbreviation
  AUS: Australian

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifé.

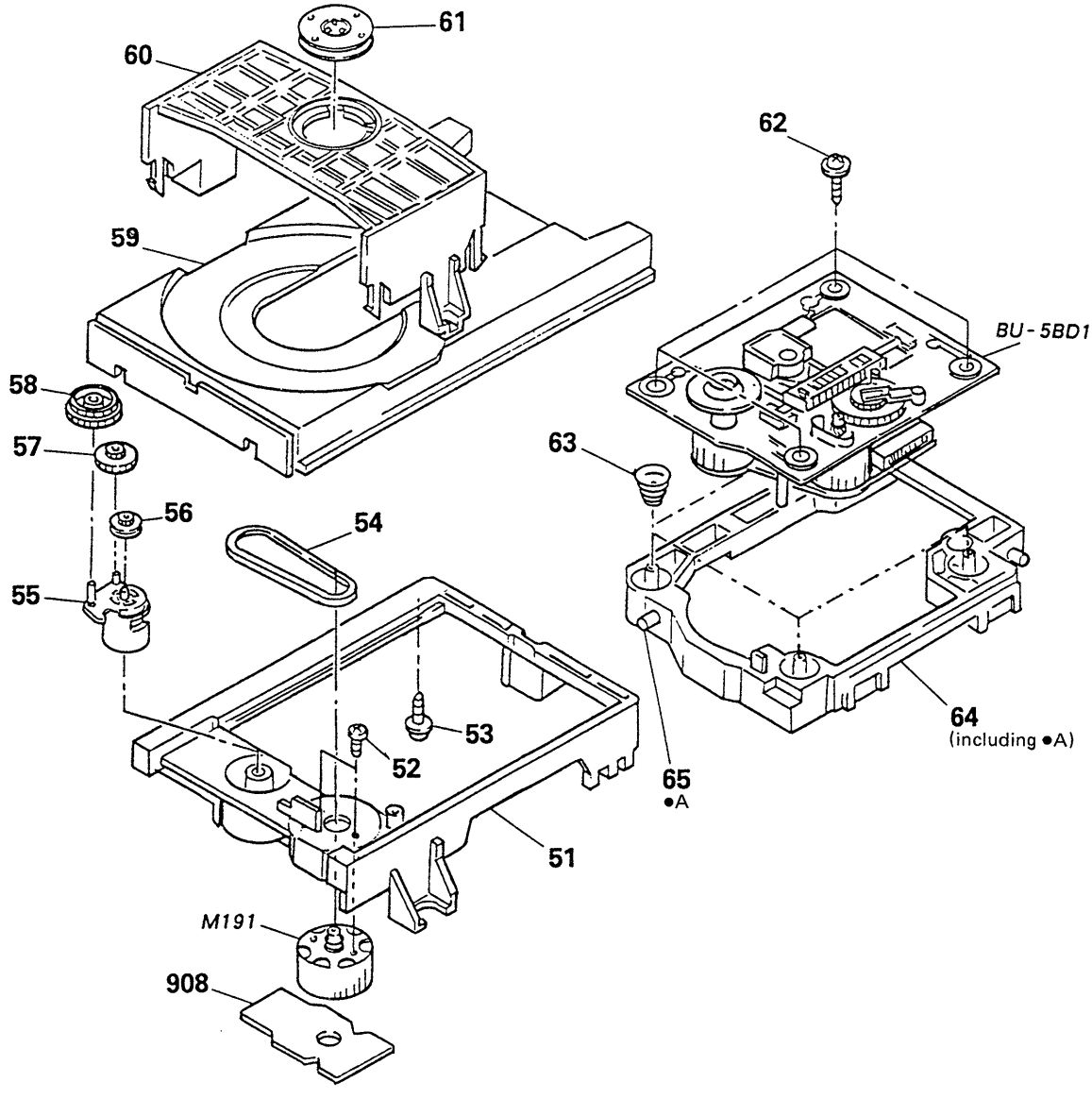
(1). GENERAL



No.	Part No.	Description	Remarks
1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
2	3-703-685-21	SCREW +BV 3X8	
3	4-929-515-12	(Canadian).....PANEL (FRONT)	
	4-929-515-22	(US).....PANEL (FRONT)	
	4-929-515-31	(AEP,UK,E,AUS)...PANEL (FRONT)	
4	4-908-848-01	EMBLEM, SONY	
5	*4-929-557-01	CUSHION (PANEL)	
6	X-4922-923-1	(EXCEPT Canadian)...PANEL (SUB) ASSY	
	X-4922-928-1	(Canadian).....PANEL (SUB) ASSY	
7	4-929-528-01	ESCUTCHEON (23)	
8	7-685-645-79	SCREW +BVTP 3X6 TYPE2 N-S	
9	4-922-921-01	BUTTON (POWER)	
10	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
11	4-929-529-01	CASE	
12	4-929-521-01	(EXCEPT Canadian)...PANEL, LOADING	
	4-929-521-21	(Canadian).....PANEL, LOADING	
13	*4-922-524-01	HOLDER (LEFT)	
14	*4-922-523-01	HOLDER (RIGHT)	
15	4-929-531-01	BUTTON (C)	
16	A-4675-298-A	KNOB (HP) ASSY	
17	4-929-527-01	BUTTON (M/C)	
18	*4-922-980-01	HOLDER (LED)	
19	7-682-548-09	SCREW +BVTT 3X8 (S)	
20	X-3304-938-2	(EXCEPT Canadian)...FOOT ASSY	
	X-4885-950-1	(Canadian).....FOOT ASSY	
21	*4-929-513-31	(US).....PANEL, BACK	
	*4-929-513-41	(Canadian)...PANEL, BACK	
	*4-929-513-51	(AEP).....PANEL, BACK	
	*4-929-513-61	(UK,AUS).....PANEL, BACK	
	*4-929-513-71	(E).....PANEL, BACK	

No.	Part No.	Description	Remarks
22	*4-886-555-00	HEAT SINK	
23	*3-703-244-00	(EXCEPT E)...BUSHING (2104), CORD	
	*3-703-571-11	(E).....BUSHING (S) (4516), CORD	
24	7-682-547-09	SCREW +BVTT 3X6 (S)	
25	4-886-821-11	SCREW, S TIGHT, +PTTWH 3X6	
26	3-704-366-31	SCREW (CASE) (M3X6)	
27	7-682-547-04	SCREW +BVTT 3X6 (S)	
28	4-929-561-01	CUSHION (CASE)	
29	*4-929-571-01	(US)...REINFORCEMENT (CASE)	
30	4-929-522-01	PLATE, INDICATION	
901	*1-632-491-11	PC BOARD, SWITCH	
902	*A-4617-184-A	(US,Canadian,E,AUS)...MOUNTED PCB, DISP	
	*A-4617-312-A	(AEP,UK).....MOUNTED PCB, DISP	
903	*A-4617-186-A	MOUNTED PCB, MVR	
904	*1-632-490-11	PC BOARD, JACK	
905	*A-4617-396-A	MOUNTED PCB, MAIN	
906	1-575-002-11	WIRE, FLAT TYPE (22 CORE)	
907	⚠1-526-565-00	(E)...AC PLUG ADAPTOR	
CNP1	⚠1-575-104-11	(E).....CORD, POWER	
CNP1	⚠1-575-105-11	(US,Canadian)...CORD, POWER	
CNP1	⚠1-575-452-11	(UK).....CORD, POWER	
CNP1	⚠1-575-453-11	(AEP).....CORD, POWER	
CNP1	⚠1-575-677-11	(AUS).....CORD, POWER	
T1	⚠1-449-921-11	(US,Canadian)...TRANSFORMER, POWER	
T1	⚠1-449-922-11	(AEP,UK,AUS)....TRANSFORMER, POWER	
T1	⚠1-449-923-11	(E).....TRANSFORMER, POWER	

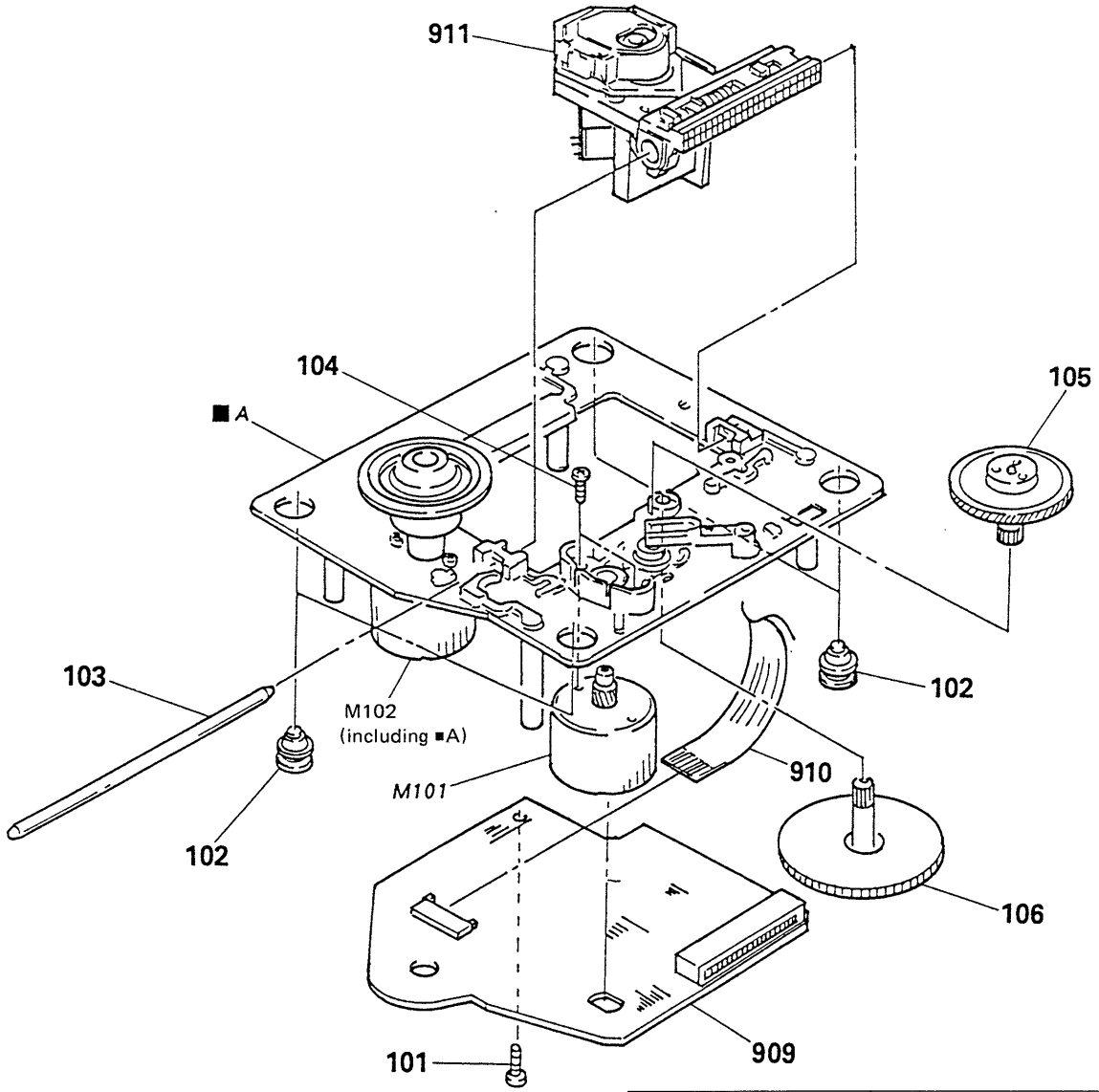
(2). MECHANISM (CDM14-5BD1)



No.	Part No.	Description	Remarks
51	4-933-111-01	CHASSIS (MD)	
52	7-621-775-10	SCREW +B 2.6X4	
53	*4-917-583-21	BRACKET, YOKE	
54	4-927-649-01	BELT	
55	4-933-109-01	CAM	
56	4-927-651-01	PULLEY (S)	
57	4-927-628-01	GEAR (C)	
58	4-933-107-01	GEAR (PL)	
59	4-933-112-01	TABLE, DISK	

No.	Part No.	Description	Remarks
60	4-933-110-01	HOLDER (MG)	
61	A-4675-347-A	MG ASSY	
62	4-933-134-01	SCREW (+PTPWH M2.6X6)	
63	4-917-541-01	SPRING (B)	
64	4-933-129-01	HOLDER (BU)	
65	4-933-108-01	SHAFT (CAM)	
908	*1-632-202-11	PC BOARD, LOADING	
M191	A-4604-363-A	MOTOR (L) ASSY	

(3). PICK UP BLOCK (BU-5BD1)



Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

No.	Part No.	Description	Remarks
101	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
102	4-933-126-01	INSULATOR (A)	
103	4-917-565-01	SHAFT, SLED	
104	7-621-255-15	SCREW +P 2X3	
105	4-917-567-01	GEAR (M)	
106	4-917-564-01	GEAR (P), FLATNESS	

No.	Part No.	Description	Remarks
909	*A-4617-161-A	MOUNTED PCB, BD	
910	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
911	⚠8-848-144-11	DEVICE, OPTICAL KSS-240A	
M101	X-4917-504-1	MOTOR ASSY (SLED)	
M102	X-4917-523-3	MOTOR ASSY (SPINDLE)	

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description			
C206	1-126-059-11	ELECT	10MF	20%	50V
C207	1-124-045-00	ELECT	4.7MF	20%	50V
C208	1-126-059-11	ELECT	10MF	20%	50V
C209	1-124-471-00	ELECT	1000MF	20%	6.3V
C210	1-124-471-00	ELECT	1000MF	20%	6.3V
C211	1-164-159-11	CERAMIC	0.1MF		50V
C212	1-126-024-11	ELECT	220MF	20%	16V
C213	1-164-159-11	CERAMIC	0.1MF		50V
C233	1-162-294-31	CERAMIC	0.001MF	10%	50V
C301	1-124-994-11	ELECT	100MF	20%	10V
C302	1-126-301-11	ELECT	1MF	20%	50V
C304	1-136-161-00	FILM	0.047MF	5%	50V
C305	1-161-374-11	CERAMIC	0.0015MF	30%	16V
C306	1-164-159-11	CERAMIC	0.1MF		50V
C307	1-162-306-11	CERAMIC	0.01MF	20%	16V
C308	1-126-300-11	ELECT	0.47MF	20%	50V
C309	1-164-159-11	CERAMIC	0.1MF		50V
C310	1-164-159-11	CERAMIC	0.1MF		50V
C311	1-164-159-11	CERAMIC	0.1MF		50V
C312	1-164-159-11	CERAMIC	0.1MF		50V
C313	1-136-742-11	FILM	0.1MF	5%	50V
C314	1-136-742-11	FILM	0.1MF	5%	50V
C315	1-136-742-11	FILM	0.1MF	5%	50V
C316	1-136-742-11	FILM	0.1MF	5%	50V
C317	1-126-022-11	ELECT	47MF	20%	10V
C318	1-124-472-11	ELECT	470MF	20%	6.3V
C319	1-136-742-11	FILM	0.1MF	5%	50V
C320	1-124-443-00	ELECT	100MF	20%	6.3V
C321	1-162-199-31	CERAMIC	10PF	5%	50V
C322	1-162-199-31	CERAMIC	10PF	5%	50V
C323	1-124-443-00	ELECT	100MF	20%	6.3V
C324	1-136-742-11	FILM	0.1MF	5%	50V
C325	1-124-443-00	ELECT	100MF	20%	6.3V
C326	1-136-742-11	FILM	0.1MF	5%	50V
C327	1-124-443-00	ELECT	100MF	20%	6.3V
C328	1-136-742-11	FILM	0.1MF	5%	50V
C329	1-136-742-11	FILM	0.1MF	5%	50V
C330	1-136-742-11	FILM	0.1MF	5%	50V
C331	1-124-443-00	ELECT	100MF	20%	6.3V
C332	1-136-742-11	FILM	0.1MF	5%	50V
C333	1-124-443-00	ELECT	100MF	20%	6.3V
C334	1-136-742-11	FILM	0.1MF	5%	50V
C342	1-124-994-11	ELECT	100MF	20%	10V
C343	1-164-159-11	CERAMIC	0.1MF		50V
C345	1-124-472-11	ELECT	470MF	20%	6.3V

Ref.No.	Part No.	Description
901	*1-632-491-11	PC BOARD, SWITCH
902	*A-4617-184-A	(US,Canadian,E,AUS)..MOUNTED PCB, DISP
	*A-4617-312-A	(AEP,UK).....MOUNTED PCB, DISP
903	*A-4617-186-A	MOUNTED PCB, MVR
904	*1-632-490-11	PC BOARD, JACK
905	*A-4617-396-A	MOUNTED PCB, MAIN
906	1-575-002-11	WIRE, FLAT TYPE (22 CORE)
907	⚠1-526-565-00	(E)...AC PLUG ADAPTOR
908	*1-632-202-11	PC BOARD, LOADING
909	*A-4617-161-A	MOUNTED PCB, BD
910	1-575-001-11	WIRE, FLAT TYPE (12 CORE)
911	⚠8-848-144-11	DEVICE, OPTICAL KSS-240A

C101	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C102	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C103	1-126-094-11	ELECT	4.7MF	20%	16V
C104	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C105	1-126-154-11	ELECT	47MF	20%	6.3V
C106	1-126-154-11	ELECT	47MF	20%	6.3V
C107	1-126-154-11	ELECT	47MF	20%	6.3V
C108	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C109	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C110	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C111	1-131-367-00	TANTALUM	22MF	20%	16V
C112	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C113	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C114	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C115	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C116	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C117	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C118	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C119	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C120	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C151	1-163-019-00	CERAMIC CHIP	0.0068MF	10%	50V
C152	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C153	1-163-135-00	CERAMIC CHIP	560PF	10%	50V
C154	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C155	1-163-023-00	CERAMIC CHIP	0.015MF	10%	50V
C171	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C172	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C173	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C174	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C201	1-126-842-11	ELECT	4700MF	20%	16V
C202	1-126-842-11	ELECT	4700MF	20%	16V
C203	1-126-880-11	ELECT	100MF	20%	63V
C204	1-126-059-11	ELECT	10MF	20%	50V

Ref.No.	Part No.	Description			
C346	1-124-472-11	ELECT	470MF	20%	6.3V
C346A	1-164-159-11	CERAMIC	0.1MF		50V
C351	1-136-478-11	FILM	470PF	5%	630V
C352	1-136-478-11	FILM	470PF	5%	630V
C353	1-136-437-11	FILM	220PF	5%	630V
C354	1-136-437-11	FILM	220PF	5%	630V
C355	1-136-437-11	FILM	220PF	5%	630V
C356	1-136-437-11	FILM	220PF	5%	630V
C357	1-130-856-00	FILM	0.0068MF	5%	100V
C358	1-130-856-00	FILM	0.0068MF	5%	100V
C359	1-136-228-11	FILM	0.0012MF	5%	100V
C360	1-136-228-11	FILM	0.0012MF	5%	100V
C361	1-126-051-11	ELECT	47MF	20%	50V
C362	1-126-051-11	ELECT	47MF	20%	50V
C363	1-136-250-11	FILM	0.001MF	5%	100V
C364	1-136-250-11	FILM	0.001MF	5%	100V
C365	1-136-250-11	FILM	0.001MF	5%	100V
C366	1-136-250-11	FILM	0.001MF	5%	100V
C367	1-136-170-00	FILM	0.27MF	5%	50V
C368	1-136-170-00	FILM	0.27MF	5%	50V
C369	1-124-443-00	ELECT	100MF	20%	6.3V
C370	1-164-159-11	CERAMIC	0.1MF		50V
C385	1-126-022-11	ELECT	47MF	20%	10V
C401	1-164-159-11	CERAMIC	0.1MF		50V
C402	1-164-159-11	CERAMIC	0.1MF		50V
C403	1-126-154-11	ELECT	47MF	20%	6.3V
C501	1-126-023-11	ELECT	100MF	20%	16V
C502	1-126-023-11	ELECT	100MF	20%	16V
C503	1-126-023-11	ELECT	100MF	20%	16V
C505	1-124-768-11	ELECT	4.7MF	20%	50V
C506	1-164-159-11	CERAMIC	0.1MF		50V
CN101	1-568-796-11	SOCKET, CONNECTOR 22P			
CN102	1-568-795-11	SOCKET, CONNECTOR 12P			
CN103	*1-564-721-11	PIN, CONNECTOR (SMALL TYPE) 5P			
CN301	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P			
CN401	1-535-799-11	JUMPER, FILM (WITH TERMINAL)			
CN501	*1-564-712-11	PIN, CONNECTOR (SMALL TYPE)10P			
CNP1	⚠1-575-104-11	(E).....CORD, POWER			
CNP1	⚠1-575-105-11	(US,Canadian)...CORD, POWER			
CNP1	⚠1-575-452-11	(UK).....CORD, POWER			
CNP1	⚠1-575-453-11	(AEP).....CORD, POWER			
CNP1	⚠1-575-677-11	(AUS).....CORD, POWER			
CNP201	*1-564-321-00	PIN, CONNECTOR 2P			
CNP301	*1-568-933-11	SOCKET, CONNECTOR 30P			
CNP302	*1-568-822-11	SOCKET, CONNECTOR 22P			
CNP303	*1-564-712-11	PIN, CONNECTOR (SMALL TYPE)10P			
CNP401	*1-564-339-00	PIN, CONNECTOR 5P			
CNP502	*1-564-338-00	PIN, CONNECTOR 4P			
CP501	1-233-202-11	COMPOSITION CIRCUIT BLOCK			
D101	8-719-105-72	DIODE RD4.7M-B1			
D201	8-719-200-82	DIODE 11ES2			
D202	8-719-200-82	DIODE 11ES2			
D203	8-719-200-82	DIODE 11ES2			
D204	8-719-200-82	DIODE 11ES2			
D205	8-719-200-82	DIODE 11ES2			
D206	8-719-107-94	DIODE 1SS202-1			
D207	8-719-109-85	DIODE RD5.1ES-B2			
D208	8-719-114-52	DIODE RD8.2JS-B1			

Ref.No.	Part No.	Description
D209	8-719-110-13	DIODE RD9.1ES-B2
D301	8-719-107-94	DIODE 1SS202-1
D302	8-719-114-29	DIODE RD5.1JS-B1
D303	8-719-210-21	DIODE 11EQS04
D304	8-719-107-94	DIODE 1SS202-1
D305	8-719-107-94	DIODE 1SS202-1
D306	8-719-107-94	DIODE 1SS202-1
D401	8-719-107-94	DIODE 1SS202-1
D402	8-719-107-94	DIODE 1SS202-1
D403	8-719-107-94	DIODE 1SS202-1
D404	8-719-107-94	DIODE 1SS202-1
D405	8-719-107-94	DIODE 1SS202-1
D406	8-719-107-94	DIODE 1SS202-1
D407	8-719-107-94	DIODE 1SS202-1
D408	8-719-107-94	DIODE 1SS202-1
D409	8-719-107-94	DIODE 1SS202-1
D410	8-719-107-94	DIODE 1SS202-1
D411	8-719-107-94	DIODE 1SS202-1
D412	8-719-110-13	DIODE RD9.1ES-B2
D501	8-719-970-49	DIODE BR4361F
D502	8-719-109-85	DIODE RD5.1ES-B2
FLD401	1-519-555-11	INDICATOR TUBE, FLUORESCENT
IC101	8-752-037-33	IC CXA1372Q
IC102	8-759-821-94	IC LA6532M
IC103	8-759-633-65	IC M54641L
IC201	8-759-630-21	IC M5290P-16
IC202	8-759-633-42	IC M5293L
IC301	8-752-333-31	IC CXD2500Q
IC302	8-752-334-06	IC CXD2551P
IC303	8-759-233-63	IC TC74HCU04AP
IC304	8-752-334-87	IC CXD2552Q
IC305	8-752-334-77	IC CXD2553S
IC306	8-759-710-32	IC NJM5532S
IC307	8-759-710-32	IC NJM5532S
IC310	8-759-977-71	IC GP1F31T
IC401	8-759-150-28	IC UPD75212ACW-206
IC402	8-749-920-83	IC GP1U52XB
IC501	8-759-981-89	IC RC4556S
IC502	8-759-633-65	IC M54641L
J101	1-216-295-00	METAL GLAZE 0 5% 1/10W
J102	1-216-295-00	METAL GLAZE 0 5% 1/10W
J401	1-568-761-11	JACK, PIN 4P (LINE OUT)
J501	1-568-519-21	(EXCEPT US)...JACK, LARGE TYPE(PHONES)
J501	1-568-519-41	(US).....JACK, LARGE TYPE(PHONES)
M101	X-4917-504-1	MOTOR ASSY (SLED)
M102	X-4917-523-3	MOTOR ASSY (SPINDLE)
M191	A-4604-363-A	MOTOR (L) ASSY
PS201	1-532-685-91	LINK, IC (0.8A)
PS202	1-532-637-91	LINK, IC (1A)
Q101	8-729-901-01	TRANSISTOR DTC144EK
Q201	8-729-111-67	TRANSISTOR 2SB1094-L
Q202	8-729-400-82	TRANSISTOR 2SD1266-P
Q203	8-729-111-67	TRANSISTOR 2SB1094-L
Q204	8-729-230-45	TRANSISTOR 2SC2458TP-YGR
Q205	8-729-900-80	TRANSISTOR DTC114ES

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description			
Q206	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q308	8-729-900-89	TRANSISTOR DTC144ES			
Q351	8-729-224-62	TRANSISTOR 2SK246GR			
Q352	8-729-905-67	TRANSISTOR 2SD1944-K			
Q353	8-729-201-05	TRANSISTOR 2SC2878B			
Q354	8-729-201-05	TRANSISTOR 2SC2878B			
Q355	8-729-900-61	TRANSISTOR DTA114ES			
Q359	8-729-900-61	TRANSISTOR DTA114ES			
Q361	8-729-900-61	TRANSISTOR DTA114ES			
Q362	8-729-900-80	TRANSISTOR DTC114ES			
Q363	8-729-900-80	TRANSISTOR DTC114ES			
Q401	8-729-900-45	TRANSISTOR DTC114EF			
Q402	8-729-900-45	TRANSISTOR DTC114EF			
R101	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R102	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R103	1-216-091-00	METAL GLAZE	56K	5%	1/10W
R104	1-216-099-00	METAL GLAZE	120K	5%	1/10W
R105	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W
R106	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R107	1-216-114-00	METAL GLAZE	510K	5%	1/10W
R108	1-216-105-00	METAL GLAZE	220K	5%	1/10W
R109	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R110	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R111	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R112	1-216-083-00	METAL GLAZE	27K	5%	1/10W
R113	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W
R114	1-216-105-00	METAL GLAZE	220K	5%	1/10W
R152	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R153	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R154	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R155	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R156	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R157	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R158	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R159	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R160	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R171	1-216-001-00	METAL GLAZE	10	5%	1/10W
R172	1-216-001-00	METAL GLAZE	10	5%	1/10W
R173	1-216-001-00	METAL GLAZE	10	5%	1/10W
R174	1-216-001-00	METAL GLAZE	10	5%	1/10W
R201	1-249-425-11	CARBON	4.7K	5%	1/4W
R202	1-249-425-11	CARBON	4.7K	5%	1/4W
R203	1-249-438-11	CARBON	56K	5%	1/4W
R204	1-249-429-11	CARBON	10K	5%	1/4W
R205	1-249-435-11	CARBON	33K	5%	1/4W
R207	1-249-421-11	CARBON	2.2K	5%	1/4W
R208	1-249-423-11	CARBON	3.3K	5%	1/4W
R209	1-249-422-11	CARBON	2.7K	5%	1/4W
R210	1-249-417-11	CARBON	1K	5%	1/4W
R211	1-249-411-11	CARBON	330	5%	1/4W
R213	1-249-381-11	CARBON	1	5%	1/4W
R301	1-249-411-11	CARBON	330	5%	1/4W
R302	1-249-417-11	CARBON	1K	5%	1/4W
R303	1-249-417-11	CARBON	1K	5%	1/4W
R304	1-249-417-11	CARBON	1K	5%	1/4W
R305	1-249-417-11	CARBON	1K	5%	1/4W
R308	1-249-423-11	CARBON	3.3K	5%	1/4W
R309	1-249-423-11	CARBON	3.3K	5%	1/4W

Ref.No.	Part No.	Description			
R310	1-249-429-11	CARBON	10K	5%	1/4W
R311	1-249-429-11	CARBON	10K	5%	1/4W
R312	1-249-441-11	CARBON	100K	5%	1/4W
R313	1-249-417-11	CARBON	1K	5%	1/4W
R314	1-249-417-11	CARBON	1K	5%	1/4W
R315	1-249-417-11	CARBON	1K	5%	1/4W
R316	1-249-411-11	CARBON	330	5%	1/4W
R317	1-249-411-11	CARBON	330	5%	1/4W
R318	1-249-411-11	CARBON	330	5%	1/4W
R319	1-249-417-11	CARBON	1K	5%	1/4W
R320	1-249-411-11	CARBON	330	5%	1/4W
R321	1-249-413-11	CARBON	470	5%	1/4W
R322	1-249-441-11	CARBON	100K	5%	1/4W
R323	1-247-887-00	CARBON	220K	5%	1/4W
R324	1-249-411-11	CARBON	330	5%	1/4W
R325	1-249-393-11	CARBON	10	5%	1/4W
R326	1-249-417-11	CARBON	1K	5%	1/4W
R330	1-249-401-11	CARBON	47	5%	1/4W
R340	1-249-441-11	CARBON	100K	5%	1/4W
R341	1-249-429-11	CARBON	10K	5%	1/4W
R342	1-247-848-11	CARBON	5.1K	5%	1/4W
R343	1-249-393-11	CARBON	10	5%	1/4W
R344	1-249-429-11	CARBON	10K	5%	1/4W
R351	1-247-854-11	CARBON	9.1K	5%	1/4W
R352	1-247-854-11	CARBON	9.1K	5%	1/4W
R353	1-247-854-11	CARBON	9.1K	5%	1/4W
R354	1-247-854-11	CARBON	9.1K	5%	1/4W
R355	1-249-421-11	CARBON	2.2K	5%	1/4W
R356	1-249-421-11	CARBON	2.2K	5%	1/4W
R357	1-249-421-11	CARBON	2.2K	5%	1/4W
R358	1-249-421-11	CARBON	2.2K	5%	1/4W
R359	1-249-432-11	CARBON	18K	5%	1/4W
R360	1-249-432-11	CARBON	18K	5%	1/4W
R361	1-249-432-11	CARBON	18K	5%	1/4W
R362	1-249-432-11	CARBON	18K	5%	1/4W
R363	1-249-419-11	CARBON	1.5K	5%	1/4W
R364	1-249-419-11	CARBON	1.5K	5%	1/4W
R365	1-249-419-11	CARBON	1.5K	5%	1/4W
R366	1-249-419-11	CARBON	1.5K	5%	1/4W
R367	1-247-891-00	CARBON	330K	5%	1/4W
R368	1-247-891-00	CARBON	330K	5%	1/4W
R369	1-249-397-11	CARBON	22	5%	1/4W
R370	1-249-397-11	CARBON	22	5%	1/4W
R371	1-249-405-11	CARBON	100	5%	1/4W
R372	1-249-405-11	CARBON	100	5%	1/4W
R373	1-249-405-11	CARBON	100	5%	1/4W
R374	1-249-405-11	CARBON	100	5%	1/4W
R376	1-249-413-11	CARBON	470	5%	1/4W
R377	1-249-418-11	CARBON	1.2K	5%	1/4W
R378	1-249-418-11	CARBON	1.2K	5%	1/4W
R379	1-249-439-11	CARBON	68K	5%	1/4W
R380	1-249-439-11	CARBON	68K	5%	1/4W
R381	1-249-405-11	CARBON	100	5%	1/4W
R382	1-249-405-11	CARBON	100	5%	1/4W
R401	1-249-435-11	CARBON	33K	5%	1/4W
R402	1-249-435-11	CARBON	33K	5%	1/4W
R403	1-249-435-11	CARBON	33K	5%	1/4W

Ref.No.	Part No.	Description
R404	1-249-425-11	CARBON 4.7K 5% 1/4W
R405	1-249-425-11	CARBON 4.7K 5% 1/4W
R406	1-249-439-11	CARBON 68K 5% 1/4W
R407	1-249-411-11	CARBON 330 5% 1/4W
R408	1-249-417-11	CARBON 1K 5% 1/4W
R409	1-249-417-11	CARBON 1K 5% 1/4W
R501	1-249-435-11	CARBON 33K 5% 1/4W
R502	1-249-435-11	CARBON 33K 5% 1/4W
R503	1-249-432-11	CARBON 18K 5% 1/4W
R504	1-249-432-11	CARBON 18K 5% 1/4W
R505	1-249-422-11	CARBON 2.7K 5% 1/4W
R506	1-249-422-11	CARBON 2.7K 5% 1/4W
R507	1-249-431-11	CARBON 15K 5% 1/4W
R508	1-249-431-11	CARBON 15K 5% 1/4W
R509	1-249-402-11	CARBON 56 5% 1/4W
R510	1-249-402-11	CARBON 56 5% 1/4W
R511	1-249-405-11	CARBON 100 5% 1/4W
R512	1-249-405-11	CARBON 100 5% 1/4W
RV101	1-238-016-11	RES, ADJ, CARBON 10K (TRACKING GAIN)
RV102	1-238-016-11	RES, ADJ, CARBON 10K (FOCUS GAIN)
RV501	1-238-750-11	RES, VAR, CARBON 10K/10K (LINE OUT/PHONE LEVEL)
RY301	1-515-787-11	RELAY
S101	1-572-085-11	SWITCH, LEAF (LIMIT)
S191	1-572-086-11	SWITCH, LEAF (LOAD OUT)
S192	1-572-086-11	SWITCH, LEAF (LOAD IN)
S401	1-571-305-11	SWITCH, PUSH (1 KEY)(POWER)
S402	1-554-303-21	SWITCH, KEY BOARD (CONTINUE)
S403	1-554-303-21	SWITCH, KEY BOARD (SHUFFLE)
S404	1-554-303-21	SWITCH, KEY BOARD (PROGRAM)
S405	1-554-303-21	SWITCH, KEY BOARD (1)
S406	1-554-303-21	SWITCH, KEY BOARD (2)
S407	1-554-303-21	SWITCH, KEY BOARD (3)
S408	1-554-303-21	SWITCH, KEY BOARD (4)
S409	1-554-303-21	SWITCH, KEY BOARD (5)
S410	1-554-303-21	SWITCH, KEY BOARD (6)
S411	1-554-303-21	SWITCH, KEY BOARD (7)
S412	1-554-303-21	SWITCH, KEY BOARD (8)
S413	1-554-303-21	SWITCH, KEY BOARD (9)
S414	1-554-303-21	SWITCH, KEY BOARD (10)
S415	1-554-303-21	SWITCH, KEY BOARD (11)
S416	1-554-303-21	SWITCH, KEY BOARD (12)
S417	1-554-303-21	SWITCH, KEY BOARD (13)
S418	1-554-303-21	SWITCH, KEY BOARD (14)

Ref.No.	Part No.	Description
S419	1-554-303-21	SWITCH, KEY BOARD (15)
S420	1-554-303-21	SWITCH, KEY BOARD (16)
S421	1-554-303-21	SWITCH, KEY BOARD (17)
S422	1-554-303-21	SWITCH, KEY BOARD (18)
S423	1-554-303-21	SWITCH, KEY BOARD (19)
S424	1-554-303-21	SWITCH, KEY BOARD (20)
S425	1-554-303-21	SWITCH, KEY BOARD (TIME SET)
S426	1-554-303-21	SWITCH, KEY BOARD (EDIT/TIME FADE)
S427	1-554-303-21	SWITCH, KEY BOARD (⏮)
S428	1-554-303-21	SWITCH, KEY BOARD (⏭)
S429	1-554-303-21	SWITCH, KEY BOARD (◀◀)
S430	1-554-303-21	SWITCH, KEY BOARD (▶▶)
S431	1-554-303-21	SWITCH, KEY BOARD (>20)
S432	1-554-303-21	SWITCH, KEY BOARD (MULTI PGM)
S433	1-554-303-21	SWITCH, KEY BOARD (CLEAR)
S434	1-554-303-21	SWITCH, KEY BOARD (CHECK)
S435	1-554-303-21	SWITCH, KEY BOARD (■)
S436	1-554-303-21	SWITCH, KEY BOARD (⏸)
S437	1-554-303-21	SWITCH, KEY BOARD (▶)
S438	1-554-303-21	SWITCH, KEY BOARD (OPEN/CLOSE)
S439	1-554-303-21	SWITCH, KEY BOARD (FADER)
S440	1-554-303-21	SWITCH, KEY BOARD (REPEAT)
S441	1-554-303-21	SWITCH, KEY BOARD (PEAK SEARCH)
S442	1-554-303-21	SWITCH, KEY BOARD (TIME)
T1	⚠1-449-921-11	(US,Canadian)...TRANSFORMER, POWER
T1	⚠1-449-922-11	(AEP,UK,AUS)....TRANSFORMER, POWER
T1	⚠1-449-923-11	(E).....TRANSFORMER, POWER
VS1	⚠1-571-722-11	(E)...SWITCH, VOLTAGE SELECTION
X301	1-577-686-11	VIBRATOR, CRYSTAL (45.1584MHz)
X302	1-577-685-11	FILTER, CRYSTAL (16.9344MHz)
X401	1-577-082-11	VIBRATOR, CERAMIC (4MHz)

ACCESSORY & PACKING MATERIAL

1-465-278-11	REMOTE COMMANDER
1-559-533-11	CORD, CONNECTION
3-750-846-11	(AUS).....MANUAL, INSTRUCTION
3-750-846-41	(AEP).....MANUAL, INSTRUCTION
3-750-846-51	(US).....MANUAL, INSTRUCTION
3-750-846-61	(Canadian,AEP,UK,E)..... .....MANUAL, INSTRUCTION
4-923-540-01	CUSHION
4-925-788-01	COVER, BATTERY
*4-929-558-11	INDIVIDUAL CARTON

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

9-955-696-11

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CDP-209ES/790

SONY®
SERVICE MANUAL

US Model
Canadian Model
CDP-209ES

Canadian Model
AEP Model
UK Model
E Model
CDP-790

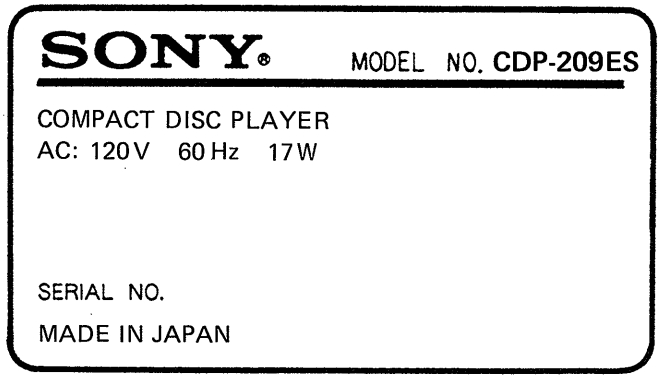
SUPPLEMENT-1

File this supplement with the service manual.

CDP-209ES has been added for Canada.

As only difference from US model of CDP-209ES is described in this manual, please refer CDP-209ES/790 service manual for the other sections.

[MODEL IDENTIFICATION]



EXPLODED VIEWS

Page	No.	Part No.	Description
29	12	4-929-521-31	PANEL, LOADING
29	21	*4-929-513-81	PANEL, BACK

ACCESSORY & PACKING MATERIAL
Additional part

Page	No.	Part No.	Description
35	–	3-750-846-31	(French) . . . MANUAL, INSTRUCTION

9-955-696-81

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CDP-209ES/790

SONY
SERVICE MANUAL

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Canadian Model
AEP Model
UK Model
E Model
CDP-790

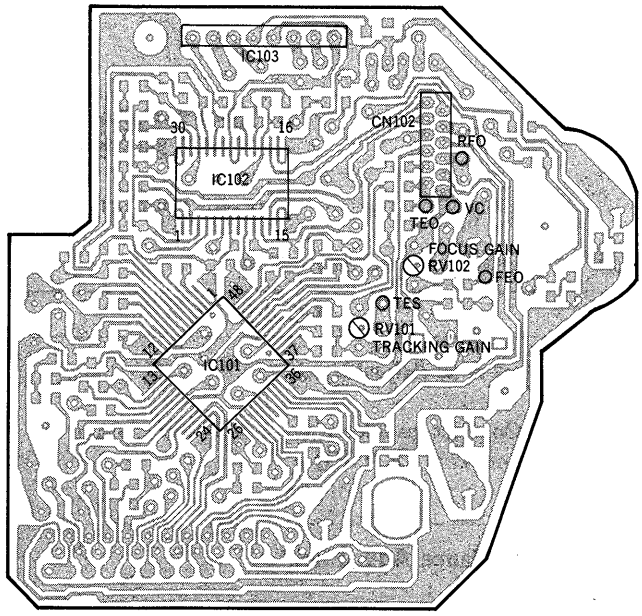
CORRECTION-1

Correct your service manual as shown below.

☛ : indicates corrected portion.

Page	INCORRECT	CORRECT
16	**Focus Bias Adjustment** 1. Connect oscilloscope to the test points TP (RF) and TP (RF VCG).	**RF Level Check** ☛ 1. Connect oscilloscope to the test point TP (RF) and TP (VC).
16	**E-F Balance Adjustment** **Procedure :** 1. TP (ADJ) and TP (TES) connect to the GND.	**E-F Balance Check** **Procedure :** 1. Connect test point TP (ADJ) to ground and TP (TES) to TP (VC) with lead wire.
17 | 18	**Focus/Tracking Gain Adjustment** 4. Adjustment RV101 so that the waveform is as shown in the picture below. (focus gain adjustment) 6. Adjust RV102 so that the waveform is as shown in the picture below. (tracking gain adjustment)	REFERNCE **Focus/Tracking Gain Adjustment** 4. Adjust RV102 so that the waveform is as shown in the picture below. (focus gain adjustment) 6. Adjust RV101 so that the waveform is as shown in the picture below. (tracking gain adjustment)

☛ : **indicates corrected portion.**

Page	INCORRECT	CORRECT
18		Adjustment Location : 【BD board】 

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